Vocational ladders or crazy paving? Making your way to higher levels

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Making your way to higher levels

Helen Connor and Brenda Little

research report

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Preface

This report is part of a suite of research projects on apprenticeships under the overall theme of 'Making work-based learning work'. The research is being carried out by the LSDA and is funded through the Learning and Skills Council's (LSC) core contract. The research for this report was begun prior to the apprenticeship reforms of May 2004, but has aimed to address the issues pertaining to Modern Apprenticeships (MAs) as progression routes to higher education and in particular, to foundation degrees (FDs). The research findings are of particular interest at a time when there is a major review under way of the 14–19 curriculum and the importance of developing vocational qualification routes for young people both in the workplace and in education (DfES 2004b – The Tomlinson Review).

Maggie Greenwood
Research Manager, LSDA

Executive summary

Our study has shown that there is no clear or simple vocational 'ladder' of progression to higher levels – often, the journey made is rather complex, especially when taken by adults. This is not well known or well understood. There are various routes in different sectors and occupational areas; some, for a variety of reasons, are more established and successful than others. But for many people who are thinking of embarking on the vocational route, the way ahead is likely to be fraught, with some significant barriers and difficult bridges to cross along the way. For the purpose of this report, 'pathways', 'routes' and 'ladders' are used interchangeably to describe the various journeys of progression made by learners to higher levels of education, knowledge and skills.

The *key messages* from our study are as follows.

- Careers guidance and information – both in schools and colleges for young people and in the workplace for those in jobs requiring Level 2 or Level 3 qualifications or on Advanced Modern Apprenticeships (AMAs) – need to make it clear that the vocational and work-based educational pathways can be viable routes for people with the ability and motivation to succeed. They should not be seen as primarily for low academic achievers.

- Although improvements to the apprenticeship frameworks are being made, much work needs to be done to encourage more high achievers to opt for apprenticeships.

- Further work needs to be done to improve success rates within Advanced Modern Apprenticeship (AMA) frameworks so that more AMAs gain the Level 3 qualifications, key skills and learning experiences that will give them entry to higher education, and are motivated by their success to apply.

- To build the value of lifelong learning to employers, they should be supported in their efforts to develop work-based learning (WBL) opportunities from Level 3 upwards, including alternative routes that might work better for older employees than the current apprenticeship framework.

- Employers, especially small firms, need to be encouraged to be more aware of and to make more use of provision offered by local colleges and universities (and other education and training providers), both in formal learning for their staff and in WBL.

- Public providers need to be encouraged to make their offerings more accessible to employers; for example, through smaller chunks of learning, appropriately assessed (including assessment in the workplace) and accredited.

- Further work needs to be done in easing the transition phase between Level 3 and Level 4 for work-based or vocational entrants to higher education, to help overcome the problems of unfamiliarity and gaps in the skills needed to underpin learning at higher levels.

- There is a need to capture much more information about progression to Level 4 qualifications via AMA and other work-based routes (including those not associated with formal qualifications) and about other higher levels of learning. This would help better comparisons to be made between academic and vocational pathways, and create a better understanding of how to promote progression more effectively; and to whom (employers and employees); and when (at what time in someone's working life/career).

- University admissions staff need to have a better awareness of the range of Level 3 vocational qualifications and WBL achievements, and a better system is required for recognising equivalencies between qualifications from Level 3 upwards. The Universities and Colleges Admissions Service (UCAS) has started to include some vocational qualifications on its Tariff system, which is a good start, but this needs further development to embrace a wider range of qualifications and WBL experiences and achievements (eg AMA achievement does not yet feature on the UCAS Tariff). UCAS also covers applications to full-time courses only, while individuals following vocational routes, especially adults, are more likely to want part-time opportunities.

- There is a need for a much better and more comprehensive system which should be based on a national qualifications and credit framework that is embraced by the whole of the HE sector. This would help to make more visible to the sector the range of achievements that potential learners on the various routes from further education and work to higher education may have, and provide recognition of their value. It would also improve consistency in the use of accreditation of prior learning (APL) for HE entry.

- Positive messages about work-based routes need to be strengthened when addressing the range of 'stakeholders' – professional bodies, careers advisers/Connexions services, employers – who all have a role to play in enhancing the value of work-based routes and the esteem in which they are held.

Some *key recommendations* follow on from these messages.

- Through its various agencies, the Department for Education and Skills (DfES) should ensure that its policies for education and training address the needs of both young people and older working adults, and do not inadvertently privilege any one particular pathway (eg the academic pathway) to the detriment of others.

- HESA and the LSC should ensure that the ability of national data systems to capture information on achievements at Level 3 and to measure flows from Level 3 to Level 4 is improved in both the HE and FE sectors. Without such improvements, it is difficult to see how judgements will be made on the success (or otherwise) of current polices on vocational education and training (VET) or initiatives specifically aimed at creating new vocational ladders to higher-level qualifications and skills.

- Advice and guidance services should ensure that information, advice and guidance (IAG) on education and training opportunities give equal prominence to work-based routes and other (ie traditional academic) routes.

- The Apprenticeships Task Force should ensure that changes to the apprenticeship framework and the consequences of these changes for learners' progression are closely monitored and evaluated.

- Sector Skills Councils (SSCs) should work with employers and with education and training providers to raise awareness of successful practices relating to work-based progression to higher-level knowledge and skills.

- SSCs should continue their current work on clarifying pathways to different levels of occupation within their sectors, linking these pathways to educational routes where possible. They should also make such information widely available to both schools and Connexions services.

- Regional Development Agencies (RDAs) should work with local education and training providers to ensure that potential sources of funding to underpin local initiatives to meet local and regional needs are not overlooked.

- Professional bodies which regulate entry to employment in particular sectors should review their criteria for membership to ensure that these adequately reflect the needs of employers in those sectors for higher-level knowledge and skills gained through a variety of pathways.

- In its forthcoming review of foundation degrees (FDs), the Quality Assurance Agency for Higher Education (QAA) should consider the extent to which students entering FD programmes with vocational and other work-based qualifications are successful in making the transition to study in higher education.

- UCAS should work with the relevant organisations – Universities UK (UUK) and the Standing Conference of Principals (SCOP) – to raise the level of knowledge about vocational and work-based qualifications among HE admissions tutors.

- Universities, colleges and employers need to have better dialogue with each other (at local/regional levels) to improve their understanding of the vocational routes to (and through) higher education that are under development – such as the reformed apprenticeship frameworks.

- UUK and SCOP (with the QAA) should encourage the development of a unified sector-wide approach to accrediting WBL and full or partial vocational qualifications for entry to higher education, together with the structures needed to support that approach.

- Together with other organisations such as the Higher Education Statistics Agency (HESA) and the Higher Education Funding Council for England (HEFCE), the LSDA needs to investigate how existing national data sets (on HE students and qualifiers, apprentices, college students and other work-based learners at Level 3 and Level 4) can be better utilised to improve the current assessment of vocational progression. These organisations should also undertake further analysis, where possible, and recommend where improvements are needed in the collection of such data to improve its quality.

1. Introduction

1.1. Background and policy context

1.1.1. Vocational education and training (VET) policy

During the second half of the 20th century, many government reports were produced on vocational and technical education (VET) beyond compulsory schooling. However, as some commentators note, 'nothing very much really happened' (Wolf 2002, 64). Much of the impetus for such reports came from the ongoing unfavourable comments about the UK's productivity gap compared with international competitors; and its links, in some cases, with skill deficiencies, especially at intermediate and advanced levels.

As a result, to improve the skill deficiencies and the quality of the workforce, government policy has given a higher priority to VET since the early 1980s, but with mixed success. In the mid to late 1980s, significant government funds were directed towards creating a clear and coherent national system for vocational qualifications – National Vocational Qualifications (NVQs) or Scottish Vocational Qualifications (SVQs) – which were to be competence-based and would reflect the standard of skills defined by the relevant industry. This was followed by various attempts by government to improve the vocational qualifications on offer to the 16–19-year-old school and college population and to offer young people better preparation for employment.

In 1992, General National Vocational Qualifications (GNVQs) were introduced in England at intermediate and advanced levels, with Advanced GNVQs (a Level 3 qualification) seen as an alternative route to higher education. But GNVQs failed to attract large numbers of young people away from the more traditional academic courses (namely, A-levels). They also failed to gain acceptance by employers in many sectors, whereas other vocational courses at a similar level, such as BTEC National Certificates and Diplomas in subjects like art and design or engineering remained popular. In 2001, Advanced GNVQs were replaced with vocational A-levels (AVCEs) as part of Curriculum 2000, which aimed to broaden the traditional A-level curriculum. In September 2002, new GCSEs in vocational subjects (eg engineering, applied business) were introduced in schools and colleges to replace Foundation and Intermediate GNVQs as part of a new vocational alternative for 14–16 year olds.

Alongside these qualifications at Level 3[1] lies the apprenticeship route to developing and enhancing skills and knowledge directly relevant to the workplace. A traditional industrial apprenticeship was the main vehicle for delivering a Level 3 skill set to young people who would become craftsmen/women or technicians (though not always a Level 3 certificate, as it was then based on time served rather than standards met). The UK's traditional apprenticeship system collapsed in the 1970s, but in 1994, apprenticeships were revived by the government as the Modern Apprenticeship (MA) framework, and were extended to a wider range of employment sectors.[2] A key element of the new MA was the

[1] For the purpose of this report, we are using level definitions for national qualifications that were in operation when the study commenced in January 2004; at that time, the National Qualifications Framework (NQF) placed national qualifications in one of three categories (general; vocationally related; occupational) and one of six levels (from Entry level to Level 5). Thus, in this framework, Level 3 equates to A-levels, AVCEs and Level 3 NVQs; and Level 4 equates to higher-level qualifications and Level 4 NVQs. A revised NQF (comprising nine levels) has since been published (QCA 2004).

[2] Throughout this report, we use the terminology pertaining to the Modern Apprenticeship (MA) framework as at September 2003 – namely, Foundation Modern Apprenticeships (FMAs) and Advanced Modern Apprenticeships (AMAs). In May 2004, the government announced reforms to the MA scheme: these included the introduction of Young Apprenticeships (YAs) for 14–16 year olds, while AMAs became Advanced Apprenticeships (AAs).

requirement for each apprentice to attain a standard of achievement equivalent to Level 3, a technical certificate and certain other key skills competencies.

Various changes have been introduced to the MA framework to improve standards across sectors and also to improve its take-up by young people. In 2002, the MA framework was split into two stages: the Foundation Modern Apprenticeship (FMA), leading to NVQ Level 2; and the Advanced Modern Apprenticeship (AMA), leading to NVQ Level 3. It was recommended in the Cassells Report (DfES 2001) that the MA framework should enable learners to progress to higher education. Further reforms to MAs were announced in a review by the LSC and the Department for Education and Skills (DfES) of the delivery of MAs (LSC 2002). These aimed at strengthening them further as a top-quality vocational option by better integrating key skills into MA programmes. The government's Skills Strategy White Paper (DfES 2003a) recommended lifting the age cap (whereby public funding for MAs was limited to those aged 24 and under) so that adults could also benefit, and involving employers more closely in promoting MAs. It reported that there is too often a mismatch between what employers and learners want, and the learning opportunities available from colleges and training providers.

In order to improve the flexibility and transferability of achievement and qualifications between sectors, the Skills Strategy White Paper (DfES 2003a) also recommended a new unit-based national system of qualifications and credit for England. Other UK countries such as Scotland have already developed such national frameworks. At the end of 2004, further changes are being proposed as a result of the Tomlinson Review of the 14–19 curriculum and qualifications (DfES 2004b), including a proposed new diploma framework that covers the whole of young people's learning programmes in place of existing individual qualifications (GCSEs, AVCEs, NVQs, A-levels, etc).

1.1.2. Vocational route to higher education

Despite all the changes that have taken place and the various reforms and initiatives, the government acknowledges that 'the vocational route remains poorly regarded and misunderstood' (DfES 2003a, 22). In post-compulsory secondary education, young people have tended to view vocational and work-based routes to further education and training as a low-prestige option, and have not opted in great numbers for highly specialised government-supported training leading to NVQs; for example, Modern Apprenticeships (MAs). Rather, they have continued in full-time education, studying for formal qualifications of an academic nature, such as A-levels, or taking other full-time courses offering general education as well as some vocational content, such as BTEC National Diplomas (Wolf 2002; Fuller and Unwin 2003). They have seen opportunities in higher education expand, while jobs requiring intermediate-level skills or qualifications have declined, or appear to be less attractive options. Moreover, many government-funded initiatives aimed at widening participation in higher education have concentrated on the development and provision of Access courses for older people; or in the school sector, on raising the aspirations and achievement of young people from economically disadvantaged backgrounds (eg the Excellence Challenge and Aimhigher programmes). It is only very recently (in 2004) that the government-funded, regionally based Aimhigher initiatives have given more attention to work-based routes to higher education and have been required to include them within their action plans. At the HE level, the recent introduction of the new foundation degrees (see **section 1.1.4**) also seeks to focus attention on work-based and work-related learning.

Some insights into why the vocational route is not generally held in high esteem come from a recent survey by UK government inspectors of VET for 14–19 year olds in Denmark, the Netherlands and New South Wales, Australia (Ofsted 2004). Though the survey was limited to these three education systems, the survey team noted that VET is

held in lower esteem by young people (and others) in England, mainly because vocational programmes are not seen as providing 'clear pathways to higher education and employment' (Ofsted 2004, 2). In comparison to England, all three education systems were characterised by:

- a greater focus on the specific development in vocational education of skills for particular types of employment
- a greater and more direct involvement of employers in determining the content and assessment of vocational courses
- the fact that teachers on vocational courses are normally required to have industrial experience that is regularly updated
- the stronger position of structured work placements in post-16 vocational courses
- the integral nature of careers education and guidance as part of vocational courses.

Ongoing research on MAs (eg LSDA 2004b, 2004c) highlights concerns about advice and guidance, especially within the WBL route in England.

Much attention is also currently given to publicising estimated individual (ie private) rates of return to higher education. These show high wage premiums being paid to graduates and A-level holders, but fairly insignificant wage premiums being paid to people who are vocationally qualified to Level 3 (see LSC 2004a). It is perhaps not surprising, therefore, that after compulsory education, young (and older) people continue to opt for the taught programmes that are seen as traditional routes to higher education, rather than choosing a vocational pathway that might lead to progression within the workplace.

1.1.3. Vocationalism in higher education

Alongside the various government initiatives and reforms that have tried to develop a clear, coherent (and sought after) vocational education pathway beyond compulsory secondary education, there have been other government pushes aimed at making higher education more relevant to the economy and the perceived needs of employers. Of course, there have long been HE first-degree courses geared to specific occupations – for example, medicine, dentistry, veterinary science, law and more recently, teacher training. But even in these more vocational areas, the standard entry route has mainly been the academic one (of A-levels). Moreover, the role of professional bodies in accrediting first-degree programmes as part of their membership requirements – and in particular, the emphasis some place on A-levels as minimum entry requirements – has reinforced the academic, A-level route to higher education. Nevertheless, from the mid-1980s onwards at least, government policies have been encouraging UK HEIs to work more closely with employers to develop curricula to meet employers' needs, and specifically to develop in undergraduate students 'transferable skills that would have value in the general labour market.

1.1.4. Foundation degrees

The most recent attempt to create a vocational ladder from intermediate levels of vocational education through to higher education is the government's new foundation degree (FD). Introduced in 2000, there are now over 1100 individual FD programmes at a large number of universities and colleges in England and Wales (but not Scotland). These are primarily intended to be work-based qualifications aimed at giving people 'the combination of technical skills, academic knowledge, and transferable skills that employers are increasingly demanding…' (HEFCE 2000, 5), but should also provide opportunities to progress to honours degrees. Foundation degrees are currently seen by government as 'the major vehicle for expansion in higher education to help radically

improve the delivery of technical skills to industry, business and services, not only for young people, but also for adults returning to training to update their technical skills.' (DfES 2003c, 43).

Figure 1.1 shows where FDs sit (between Level 3 and Level 4) on the different routes into HE courses and the likely backgrounds of students.

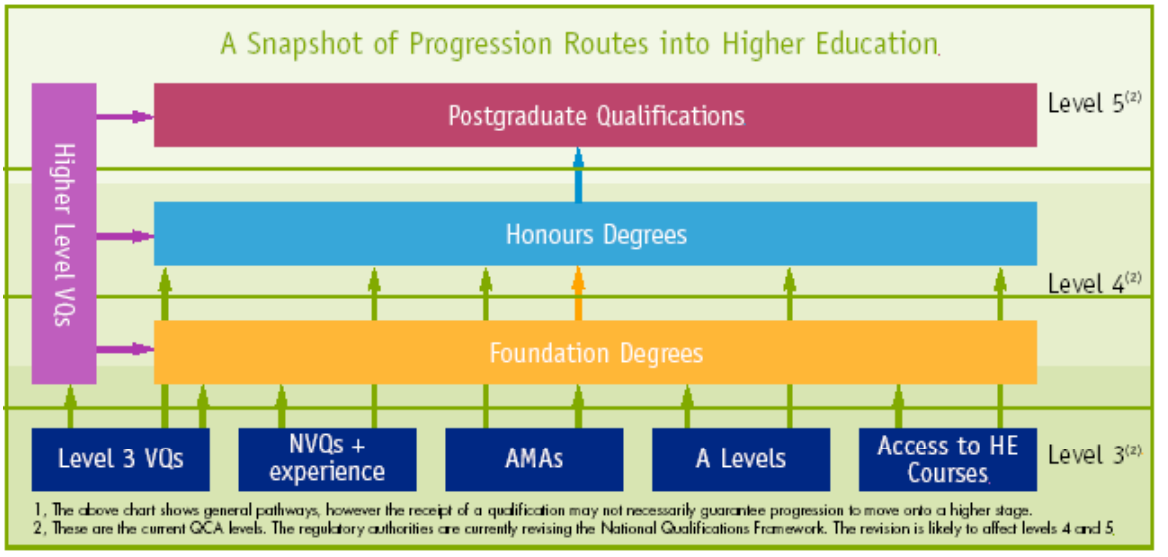

Figure 1.1 A snapshot of progression routes into higher education

Source: DfES (2003b, 7)

Note the caveat at the bottom of the diagram, that it shows theoretical general pathways into FDs, honours degrees and postgraduate study. As will be seen later in the report (**section 2**), the scale of the flows from each of the boxes varies; also, individuals can enter higher education with combinations of qualifications, or only part of some of those shown.

1.2. The study

Two policy drivers set the context for this study: enhancing vocational and work-based provision of education and training beyond compulsory education; and creating better opportunities for progression to higher-level knowledge and skills through successful completion of such provision.

The overall aim of the study (which was funded by the LSC) was to explore the role of Level 3 vocational qualifications and WBL, including MAs, as progression routes to higher education and to higher-level knowledge and skills more generally.

Despite all the reforms to VET and the efforts to create a vocational ladder (see **section 1.1**), there was a paucity of information nationally regarding transitions from Level 3 vocational education and WBL to Level 4 or other destinations, and specifically to higher education. This was highlighted in the research on vocational higher education undertaken for the LSDA in 2003 (Little *et al*. 2003). Particular weaknesses were identified in national data systems relating to student progression from Level 3 to Level 4. Many universities and colleges, SSCs, local LSCs and others looking to develop new FDs and more vocational routes into higher education also reported (informally) a lack of knowledge on existing vocational learning pathways into higher education in their areas.

It should be noted that this was a small-scale 6-month study, commissioned alongside the much larger 3-year Pathfinder project (also funded by the LSC), which aimed to develop new progression pathways for AMAs (AAs from May 2004) entering higher education. This larger programme of work (due to be completed in 2006) aims to foster the development of progression models and to facilitate partnerships between HEIs, SSCs, employers and local LSCs in seven occupational areas. There is also a major programme funded by the Sector Skills Development Agency (SSDA), which is developing sector frameworks for FDs and new progression routes with SSCs. In addition, the University Vocational Awards Council (UVAC) is working with the LSC and UCAS to develop an accreditation system to support progression from AMAs to higher education.

This study aimed to complement this other ongoing work relating to progression from apprenticeships to FDs, but took a wider remit. It sought to identify which vocational qualifications seemed most successful in enabling progression from Level 3 to Level 4 and to explore examples of in-company education and training schemes that provide opportunities for employees to progress to higher-level knowledge and skills. From these investigations, we aimed to identify key inhibitors and enablers for work-based progression to higher-level knowledge and skills.

The scope of the study was limited to England.

1.2.1. Methodology

The research was undertaken in the period between January 2004 and July 2004 and involved:

- *a review* of the available research literature on transitions from Level 3 to Level 4: this was undertaken at the start of the study in January 2004 and updated as new material became available up to July 2004

- *identification* of relevant data and secondary analysis of national data sets, focusing on student completion of Level 3 vocational qualifications and progression to higher education; as part of this work, a special run of HESA data was requested to explore the entry qualifications of undergraduate students in more detail

- *further exploration* of supply, demand and progression patterns at Level 3 and Level 4 in four contrasting employment sectors. In this mainly interview-based exploration, we looked to broaden our investigations beyond what could be measured by the available statistics on education and training leading to formal qualifications (which were expected to be limited and to vary between sectors), and to try to gain an understanding of what works in work-based education and training – what encourages progression to higher-level knowledge and skills. We also sought from the different sectors examples of successful progression in specific areas.

Our four chosen sectors were *agriculture and horticulture*, *automotive engineering, health and social care* and *travel services*. These sectors were chosen to illustrate the diversity of experiences relating to HE progression across discipline areas, jobs and sectors. Each of these sectors has differing needs for people with Level 3 and Level 4 qualifications, different traditions and experiences of AMAs and other work-based programmes and qualification systems, and different factors that influence their workforce development. Thus, we expected them to produce a range of interesting experiences. Interviews were undertaken with representatives in relevant SSCs and sector-wide bodies, college providers – particularly those with Centres of Vocational Excellence (CoVEs) – and with employers. (See **appendix 3** for more details of contacts.)

1.3. Report structure

The report is divided into six main sections.

Section 1 has set out the policy context for our study and the background to it.

Section 2 presents, in detail, the statistical evidence that exists on progression to higher-level knowledge and skills.

Section 3 presents an overview of each of our four sectors of employment – covering demand for and supply of skills at Level 3 and Level 4, business context, drivers and influences on progression, and providing more detail (where possible) than is available from the existing statistical data.

Section 4 focuses on the factors limiting progression, drawn from the research literature and our own sectoral interviews.

Section 5 presents a consideration of the factors that seem to help employees in the workplace move on from lower and intermediate levels of knowledge and skill to higher ones, drawing on some examples found in the study.

Section 6 summarises our main findings and draws out some messages to inform ongoing and future government initiatives for enhancing VET.

Further statistical and methodological details are given in **appendix 1** and **appendix 2**. **Appendix 3** lists organisations contacted for the study.

2. Progression pathways: the statistical evidence

2.1. Introduction

As outlined in **section 1.1**, various government policies over the years have aimed to develop the UK VET system and to establish a clearer vocational route post-16. However, there is still a rather disjointed vocational system in place and a plethora of qualifications that makes it difficult to get a clear map of progression to higher education or Level 4 from vocational qualifications at Level 3 or WBL programmes. By contrast, the map of progression is much clearer for those with academic qualifications (ie A-levels), which are much more likely to be taken by young people and which represent the traditional route taken to honours degrees.

In this section, we have extracted data from various statistical sources on education and training in England (see **appendix 1**) to put together a quantitative picture of progression to higher education and Level 4+ qualifications/learning. We cover both academic and vocational qualification routes, but focus on the role of vocational Level 3 qualifications and WBL.

Establishing a clear picture from the available data has not been particularly easy, because of the different data sources we have had to use, which have slightly different coverage from each other and lack compatibility. Some areas are weaker than others and there are some gaps in data coverage, especially relating to adult learners. This is because the main focus of national data is still on the traditional academic routes into HE study for young people, and also on publicly funded whole programmes and qualifications, rather than parts of programmes (eg learning modules or smaller chunks that employers might wish their staff to take, but which may not be given accreditation) or corporate learning programmes. Another issue is that data is still collected in separate data systems for people entering and taking higher-level qualifications in HEIs and FE colleges. As has been pointed out elsewhere (eg in Little *et al.* 2003; Parry, Davies and Williams 2003), this can lead to some uncertainty when trying to combine data from the two sectors (though we understand that some work by HEFCE is in progress to improve matching of data from the two sectors). These limitations should be borne in mind in interpreting the statistics presented.

The section is organised into three main sub-sections.

Section 2.2 considers participation and achievement at Level 3 (ie the stock of potential progressors and an indication of the scope for progression).

Section 2.3 focuses on the rate and type of flows from Level 3 to Level 4, highlighting differences between academic and vocational routes for young people and adults.

Section 2.4 takes a retrospective look at those already in higher education, showing entry qualifications of current undergraduates on different types of HE programme (ie those who have moved into Level 4 study in higher education).

Though the focus of the section is the progression of Level 3 learners to Level 4 through various qualification pathways (as shown in **figure 1.1** in **section 1.1**), it is possible for people to secure a place on an HE course with lower or no formal qualifications; for example, through a local widening access initiative, or where previous learning and experience at work can be given some accreditation [eg via a university's process of assessing prior experiential learning (APEL)], or at the discretion of admissions tutors. So it does not cover all the progression that takes place, especially on work-based routes,

which are not counted in the data available. Nor does it capture progression to higher levels of knowledge and skills through non-qualification routes.

2.2. Participation and achievement at Level 3

Level 3 definition

Achievement at Level 3, often known as being at an intermediate level, includes holding at least 2 A-levels or 4 AS levels; an Advanced GNVQ or AVCE; an NVQ Level 3 or equivalent vocational qualification, such as BTEC National Awards, ONC/OND, City & Guilds Advanced or RSA Advanced; or other professional qualifications equivalent to NVQ Level 3 (DfES SFR 03/2004; see **appendix 1**). Participation in Level 3 learning as described here also includes people on AMAs, Access to Higher Education courses and HE Foundation courses, including those where no formal qualification may be awarded.

2.2.1. People qualified to Level 3 and Level 4

Overall, there are almost 6m people of working age in England with a Level 3 qualification (ie they hold one or more of the qualifications listed in the box above) as their highest qualification. This figure is an estimate, based on the Labour Force Survey of autumn 2003. This represents almost one in five (19%) of the total working-age population. In addition, there are around 8m people qualified at Level 4 or above, which means that some 14m people, or 45% of the working-age population, hold *at least* a Level 3 qualification.

The stock of people qualified up to Level 3 has been growing over the years – in 2003, it was up by around 600,000 from the 1997 figure. There has been stronger growth at Level 4 and above over the same 6-year period (up by almost 2m people), which is due mainly to the greater demand for higher skill levels in the UK economy and more particularly, the considerable expansion of the HE sector during the 1990s.

Men are more likely to be holders of a Level 3 qualification than women (23% of the male total, compared with 15% of the female total) (see **table 2.1**); while at Level 4 and above, the percentages are fairly equal. The difference at Level 3 is likely to reflect mainly historical patterns of participation by men and women in education and employment, especially at intermediate level – with, for example, men on traditional industrial apprenticeships and hence more likely to be gaining technical qualifications; and women traditionally clustered in lower-level jobs not requiring qualifications.

It is also important to note, in the context of increasing HE participation, the age at which people achieve a Level 3 qualification. The likelihood of being qualified at Level 3 grows from 24% of 16–19 year olds to 33% of 20–24 year olds and then starts to decline among older groups (see **table 2.1**).

	All people of working age (000s)	Holding Level 3 as highest qualification	
		%	Number (000s)
Total	31,300	19	5900
By gender:			
Male	16,500	23	3700
Female	14,800	15	2200
By age:*			
16–19	2510	24	600
20–24	3110	33	1000
25–29	3100	19	590

* Older age groups are not shown, but less than 19% of Level 3 holders are above age 30. The figures are for England only.

Table 2.1 Achievement at Level 3 of people of working age in England in 2003

*Source: Labour Force Survey, autumn 2003 (reproduced in DfES SFR 03/2004; see **appendix 1**)*

2.2.2. Participation and profile of Level 3 learners

To understand Level 3 participation fully, it is important to look at the type of qualification being taken. Among young people, the vast majority of learners at Level 3 are taking A-levels (mostly full-time in schools and colleges). Among adults (aged 19+) at Level 3, the reverse is true, with the majority taking vocational or other qualifications (mostly part-time).

Among 16–18 year olds: in 2002 (in England only), just over 700,000 were on full-time Level 3 qualification programmes. Most (around 500,000) were taking GCE A/AS levels rather than AVCEs, Advanced GNVQs, NVQ Level 3 or other qualifications (see **table 2.2**). In addition, 45,000 were on AMAs, which are Level 3 work-based programmes. AMA frameworks include taking an NVQ Level 3 or equivalent qualification on a part-time basis, so AMA numbers are excluded from full-time participation figures above. Taken together (AMAs plus full-time students), this represents 40% of the 1.9m young people in the 16–18 age group in the population in England. Almost all of the 16–18 year olds taking NVQ Level 3 or equivalent qualifications were at FE colleges and HEIs, while most of those taking GCE A/AS levels were taking them at school or sixth-form colleges (see **table 2.2**).

The above estimate of the number of young learners aiming for Level 3 (AMAs plus full-time students) may under-count slightly the total number, since it excludes some other part-time Level 3 learners, such as those – a few thousand probably – young people in work currently receiving NVQ training at Level 3 outside AMA programmes. However, these 'other' part-time Level 3 learners are likely to be relatively small in number, and it is not possible to identify them all separately in the available data from LSC or DfES.

Also, it should be noted that these figures on participation by young people at Level 3 are national figures, which are likely to vary between regions due to social, geographical and local labour market factors (but it is beyond the scope of this study to explore this issue further).

Table 2.2 shows which qualifications 16–18-year-old Level 3 learners in England are taking, and at which type of institution.

	Percentage of total 16–18 population in each qualification group	Numbers (000s)
GCE A/AS level *(of which taken at school or sixth-form college)*	25.8 (*22.1*)	486
VCE A/AS level or Advanced GNVQ (*of which taken at school or sixth-form college)*	6.0 *(3.3*)	113
NVQ Level 3 and equivalent (*of which taken at school or sixth-form college)*	5.8 *(0.2)*	109
All in Level 3 full-time education	37.5	707
Total 16–18-year-old population (England)		**1,884,500**
Notes: a) Data for different qualifications is derived from different sources and represents best estimates for 2002. Provisional figures are available for 2003, but show only very small changes in percentages compared to 2002. b) Here and in other tables, due to rounding, totals may not add up exactly.		

Table 2.2 Participation of 16–18 year olds in Level 3 full-time education in England in 2002

*Source: DfES (SFR 18/2004, table 4d; see **appendix 1**)*

Among adults (age 19+): in England, around 600,000 adults were on Level 3 programmes funded by the LSC in 2002/03, but just 7% were taking GCE A/AS levels and an equally small proportion (8%) were taking Advanced GNVQs or AVCEs. Together, they totalled around 90,000. The vast majority therefore (around 500,000) were on work-related learning programmes: of these, over half were on courses leading to various professional or other qualifications and just 14% of the total at Level 3 were taking NVQ Level 3.

LSC data on new enrolments on WBL programmes in 2002/03 shows that of the total new starters on AMA frameworks (59,000), less than 20% (10,900) were aged 22 or older; and one third of the total new enrolments at NVQ Level 3 (5000) were aged 22 or older (1700).

However, these figures cover only some of the Level 3 adult participation. There is likely to be a significant number of adult learners engaged in Level 3-equivalent learning within company training programmes which is not LSC-funded, and who are probably not counted in the totals above. The figures shown, therefore, are likely to be underestimates of the true levels of participation by adults at Level 3.

Statistics on learning more generally (based on Labour Force Survey estimates) show that some 800,000 people in England with Level 3 as their highest qualification and 760,000 with Level 2 as their highest qualification had participated in job-related training in a 4-week period in autumn 2003. Unfortunately, this does not indicate if their learning was at Level 3.

As can be seen, the statistics on adults participating at Level 3 are of a poorer quality than those for young people, mainly because it is difficult to capture in the national data sets all of the participation in non-publicly funded VET (especially non-accredited training), and because some of the data shows different age breaks for adults (eg 19+, 22+). It may be that data with better comparability exists at local levels or sectors or by using other surveys, but seeking it out was beyond the resources of this study.

However, our main focus in this study is on achievement at Level 3 and the percentage who then progress to Level 4, and this is considered next.

2.2.3. Achievement at Level 3

Not all Level 3 learners achieve a qualification at Level 3. Indeed, it is the minority of learners on an AMA who do so (see end of this sub-section), while some learners take longer to get it than others (eg some adults start part-time study, break off and then go back later to finish and qualify for their award).

Looking at actual achievements at Level 3 by students in England (ie the annual qualified output at this level), it is estimated that a total of 424,000 awards were made at Level 3 in 2002/03, up by 4% from the 407,000 total in 2000/01. Again, the academic dominance is evident:

- over two-thirds of the 2002/03 total were academic qualifications (A-levels or AS levels), with slightly more than 200,000 students gaining two or more GCE A-levels and 90,000 gaining 4 AS levels in the one year

- the remainder were vocational awards: NVQ Level 3 (85,000), Advanced GNVQ/AVCEs (36,000) and full Vocationally Related Qualifications (VRQ) at Level 3 (6000).

Though the number of Level 3 awards made each year has been growing, the percentage of learners achieving vocational awards has fallen slightly since 2000/01 (from 32% to 30%). This is thought to be mainly the effect of Curriculum 2000 (in particular, the introduction of AS levels) and higher staying-on rates at school, so this may be a short-term trend. However, looking further back, the total number qualifying each year with a vocational Level 3 award has been dropping slightly, though it is difficult to make a valid assessment of trends over time because of changes to qualifications and methods of data collection. On the face of it, however, there does not seem to be any evidence that the vocational route has been growing in relative importance compared to the academic route.

The different profiles of young people and adults (in terms of enrolments on Level 3 programmes) are also seen in statistics on achievement at Level 3.

- The vast majority of those who are likely to gain an academic qualification (ie GCE A/AS level) at Level 3 by age 21 will have achieved this by age 18. By contrast, those taking vocational qualifications are more likely to take longer to do so (see **figure 2.1**).

- Put another way, while three-quarters of those qualified to Level 3 by the age of 18 have A/AS qualifications, by the age of 21, the proportion with A/AS qualifications drops to a little over half, since almost one third of Level 3 achievers will, by then, be vocationally qualified. Again, the effect of Curriculum 2000 changes is likely to be a factor here, as it is currently difficult for adults to take GCE A/AS level courses at colleges on a part-time basis.

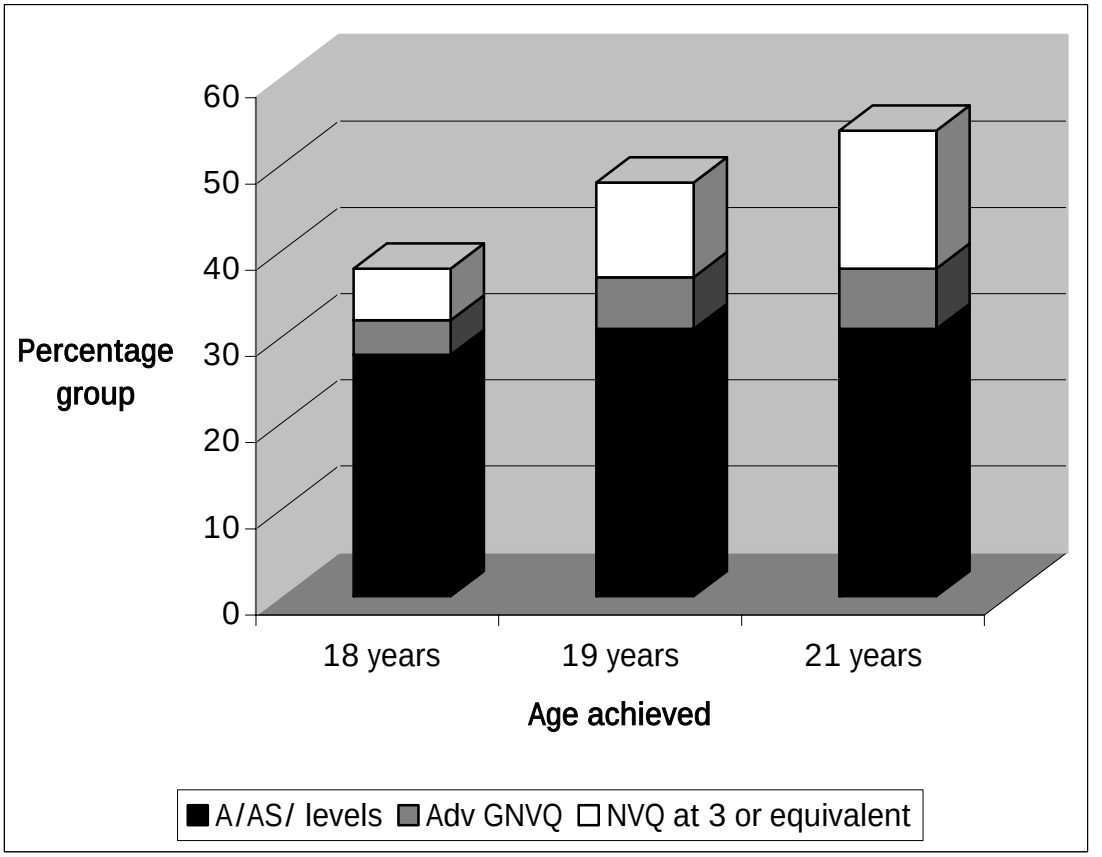

Figure 2.1 Level 3 achievement (by qualification type) by students aged 18, 19 and 21 in England in 2000

*Source: Brown, Corney and Stanton (2004, table 10c, using data from the 2000 Youth Cohort Study; see **appendix 1**)*

- **Table 2.3** shows that four times as many Level 3 awards given in 2002/03 went to young people (aged under 19) as to adults (330,000 compared to 85,000).

- Level 3 awards made to young people were mainly GCE A-levels (61% of the total awards that went to 16–18 year olds were two or more GCE A-levels), while NVQs or full VRQs accounted for just over 2% (8000). By contrast, 92% of the Level 3 awards to adults were Level 3 NVQs. It should be noted that some other vocational awards are not included (see notes under **table 2.3**).

Age groups	2 or more GCE A-levels	4 AS levels	Advanced GNVQ/ AVCE	NVQ Level 3	Full VRQ Level 3 (and equivalent)	Total awards at Level 3
16–18	201	89	32	7	1	330
19+	3	0	2	78	2	85
All	207	90	36	85	6	424

Notes:
a) The data sources used to arrive at these aggregate figures are the Secondary Schools and College Performance Table database and the National Information System for Vocational Qualifications (NISVQ). The NISVQ contains data from many different awarding bodies, but it is not comprehensive in its coverage of all awards made at Level 3 (though it covers a large number of them), as not all of the various awarding bodies provide information to NISVQ. But this is considered to be the best data source to make comparisons by type of award, age, etc; and from year to year. See also **appendix 1**.
b) Some of the columns do not add up exactly to totals because of rounding and some problems with age classification.

Table 2.3 Comparison of Level 3 awards by academic age in England in 2002/03

*Source: DfES (SFR 20/2004; see **appendix 1**)*

There are some significant differences worth noting between subjects studied at Level 3, especially the narrowness of the range of subjects covered in vocational Level 3 qualifications and in apprenticeships. There are also well-documented gender imbalances (eg fewer females taking engineering, fewer males taking healthcare). Key differences are highlighted below.

- At NVQ Level 3, business/management/office studies (21%) and health-care/medicine/health and safety (36%) account for over half of the total of Level 3 NVQs studied, while a further 20% are in construction/engineering and production work.

- Business and information technology (IT) are the dominant groups (half of the total) in AVCE double awards.

- Although the MA system now covers a much wider range of sectors (about 70 in all) than previously (pre-1980s), 10 sectors account for 70% of MA participation, the largest being business administration, followed by engineering manufacturing, hospitality, retailing and customer service (Fuller and Unwin 2003).

- Success rates in LSC-funded WBL vary by subject (as well as programme type). In 2002/03, of the 60,600 leavers from AMAs, 32% completed the framework and a further 11% obtained NVQ Level 3 only (LSC ILR for 2002/03; see **appendix 1**). Success rates (ie % completion) by area of learning ranged from 46% and 41% respectively in the engineering and information & communications technology (ICT) AMAs to 20% in retailing, customer service and transportation. Success rates for NVQ Level 3 by itself (ie not the AMA framework) varied from 21% in construction and 16% in business administration to 6% in engineering and 5% in ICT.

These differences have implications for the areas that vocationally qualified people might wish to pursue at higher levels of study.

2.3. Progression from Level 3 to Level 4

Level 4 definition

Achievement at Level 4, often known as a higher-level qualification, is having a first degree, an NVQ at Level 4, a recognised degree-level professional qualification, an HND or HNC, a diploma in higher education, a teaching or nursing qualification or other higher-level vocational or management qualification (DfES SFR 03/2004; see **appendix 1**). Participation in Level 4 study, as described here, includes also study for the new foundation degrees (FDs).

Up to the age of 21, there is reasonably good evidence available on progression between qualification levels, mainly from the series of Youth Cohort Surveys (YCS; see **appendix 1**); but evidence is much weaker for learners above the age of 21 – those gaining Level 3 qualifications at an older age.

2.3.1 The A-level versus the vocational route for young people

The YCS data shows that for young people, progression to Level 4 learning programmes is much more likely via the academic route than via the vocational route. Ninety per cent of those gaining two or more A-levels by the age of 18 were likely to be in higher education by age 21 (in 2000). The comparable percentage for those with a Level 3 vocational qualification was much lower – estimated at just 40–50%.

The lower figure for vocationally qualified learners is perhaps not that surprising, given the perception of A-level qualifications as a progression qualification and the emphasis put on them in university admissions. The recent Schwartz Review on improving the fairness of admissions to universities focused only on the A-level route in its consultative document (Schwartz 2004) and A-levels are seen generally as the traditional passport to higher education. Vocational qualifications, especially NVQs, are not perceived as being a progression qualification in the way that A-levels are (though Advanced GNVQs and their successor, AVCEs, are to some extent); nor are they promoted so much as a route to university by schools. They are more about demonstrating competence in a particular area, often to meet the specific requirements of an employer or sector. As already shown in the previous sub-section, they are much more likely to be offered in certain subjects, which may restrict students' choices for further study. It is also worth noting that Level 3 vocational qualifications are taken by far fewer 16–18 year olds than A-levels (see **figure 2.1** above); consequently, any data on them is subject to much greater uncertainty when taken from sample surveys (such as the YCS series).

It is interesting to note the extent to which the A-level route to higher education is fixed at an earlier stage. In their analysis of demand for higher education, Gayle, Berridge and Davies (2003) showed that earlier educational attainment is central to young people's progression to higher education; and in particular, lower attainment at GCSE level by learners from lower social class groups goes a long way to explaining their lower entry rate to higher education. Others (eg Payne 2003; Brown, Corney and Stanton 2004) have also shown how attainment at 16 and choices made then, or before then, affect HE entry.

- On average, those with higher GCSE passes are more likely to take the A-level route into higher education by age 18/19.

- Those who gain Level 2 qualifications (ie 5+ GCSEs) at around the age of 15 mainly go on to study for A/AS levels and achieve a first Level 3 by age 18 or 19. Fewer, around 20%, follow the vocational route (AVCEs, NVQs, BTECs, etc), even though they

would be qualified to do so (according to analysis by Brown, Corney and Stanton 2004).

- On average, 34% of 19 year olds are on degree or other HE-level courses, but this rises to 66% of those who gained 8+ GCSEs at Year 11 (YCS 2003; see **appendix 1**).

- Those from higher professional groups (54%) and with at least one parent with a degree (54%) are more likely to be in degree or other Level 4 study at age 19, illustrating the social imbalance in HE entry by young people (YCS 2003; see **appendix 1**).

2.3.2. Other pathways into Level 4

There are various likely pathways that older people (ie those aged 21+) take into higher-level study, but it is difficult to establish with certainty from the available data their pattern of flow. Although we know that there are substantial numbers of students aged over 21 in undergraduate study (some 58% of the total), it is difficult to get a reliable entry rate broken down by age groups. Official statistics are published by the DfES on the initial entry rate to higher education [the Higher Education Initial Participation Rate (HEIPR); see **appendix 1**]: these cover the 18–30 age group, but the vast majority of this data is not published separately for different age groups within the 18–30 band, nor is it produced for older ages. The latest figures show an initial entry rate of 43.5% (ie the likelihood of entering an HEI in the UK for the first time between the ages of 18 and 30).

HE Management Statistics (HEMS), produced by HESA, use a different measure – the percentage of people in a particular age group in the population who are in higher education (in any one year). (It should be noted that this is a much cruder measure than the HEIPR and simply shows a snapshot of participation.) The HESA data shows how participation in higher education drops considerably after age 21, but nevertheless it is still noteworthy: in 2001/02, around 10% of 21–24 year olds and 3% of 25–29 year olds domiciled in England were in undergraduate study (at HEIs), as compared with 27% of 18–20 year olds (HEMS 2003). But there is no data showing how many people over 21 who have gained a Level 3 vocational or other qualification progress to higher education or to other higher-level learning/skills (eg corporate WBL programmes at higher levels). Nor is it possible to estimate what percentage of young people participating in vocational education or training at Level 3 go on to higher education at a later age (eg in their mid-20s) – that is, how much the 40–50% estimated flow figure by age 21, (see the beginning of **section 2.3.1**), grows over time.

The only other data available (the LSC's WBLYP trainee database; see **appendix 1**) that looks at likely pathways relates to leavers from apprenticeship programmes. This is a rather limited set of data for our purposes, but one that suggests that rates of progression to Level 4 study are fairly low at present.

- Of those who fully achieved AMAs in 2002/03 (23,000), a very high percentage (84%) went into employment (mostly full-time jobs) or became self-employed. A little over half (59%) of those who had partial AMA achievement (3000) went into employment.

- Very small numbers of AMA leavers are recorded as entering higher education in 2002/03 – 617 in total (less than 1% of all AMA leavers). Within this group of 617, 171 were full AMA achievers and 27 were partial achievers (again representing less than 1% of all AMA achievers). Similarly, only small numbers (540) were recorded as having entered further education (see **table 2.4**)

- The proportion of AMA leavers entering higher education is fairly insignificant even in areas with the highest AMA success rates (eg in engineering manufacture).

Improvements to the current apprenticeship system (in particular, achievement rates) would probably result in increased numbers progressing to higher levels. However, it has been argued that even if progression increased to 10%, for example, of those completing AMAs, it would translate into just 1% of the 16–21-year-old HE entry cohort (Hodgson and Spours 2000). This is based on current numbers of AMAs. (More, of course, may go on to higher education if recruitment to AMAs is also increased substantially.)

Although this data shows very low rates of progression of AMAs to higher education, it is unlikely to capture all of those from AMA programmes who do take the step; for example, those who decide to work for a few years and then go on to take a higher qualification (thought to be a more common path, but one for which no overall estimate is available).

We also explored another possible source of data on progression – FE college records of leavers' destinations (ie those achieving awards at Level 3 from full-time courses, such as National Diplomas). However, these were found not to be sufficiently reliable at an aggregate level to be of use, since a very high percentage of unknowns was reported.

	Learning outcome				
Destination	**Achieved**	**Partial**	**No achievement**	**Study continuing**	**Other***
Employment/self-employed	19,589	1944	20,833	1760	158
(% in employment/self-employment)	(84%)	(59%)	(42%)	(2%)	(38%)
Continuing existing programmes of learning	1506	163	4148	94,849	53
Entered higher education	171	27	400	16	3
(% entered higher education)	(0.7%)	(0.8)	(0.8)	(.02)	(0.7)
Entered further education	27	32	464	17	0
Unemployed	140	205	4219	126	14
Over 25 and ineligible for WBL funding	237	78	715	226	19
Transferred to another employer/provider in same region	57	119	5601	7475	10
Other	593	363	6470	411	25
Destination unknown	960	351	7169	1707	134
Total	**23,280**	**3282**	**50,019**	**106,587**	**416**
*Includes unknown; examination taken, but result not known; or examination not yet taken.					

Table 2.4 Advanced Modern Apprenticeship (AMA) enrolments by learning outcome and destination in England in 2002/03

*Source: LSC WBLYP trainee database (see **appendix 1**)*

2.4. Entry to Level 4

The focus of this final section is on entry to higher-level study (Level 4). The main data that we have used to explore different routes into Level 4 is the entry qualifications of undergraduate (ie broadly Level 4) students. Again, this covers only part of the progression map – the data source is the HESA student record and the analysis was specially run for this project (which extended that available in the standard published HESA statistics). It includes HEI students only and not those in higher education at FE colleges. There are no comparable statistics for FE college learners on entry to corporate training programmes at Level 4. But, as will be seen below, the data set from HESA covers substantial numbers entering different types of Level 4 programme that require different entry qualifications. To some extent, the range of entry qualifications required might be expected, as the different programmes vary greatly in terms of student demand. The profiles of students on different programmes also vary according to gender balance, age and mode of study (see **table 2.5)** and provide an important context to entry qualifications. It is worth noting, for example, that some programmes are much more likely than others to be almost exclusively taken up by older students and to be undertaken part-time; and others seem to be more attractive to men than women or *vice versa*. Key findings on the varying profiles of students on higher-level courses are outlined below.

- by *gender*: there is a significant bias towards females in DipHE/Cert HE (around 3 females to 1 male), professional programmes (over 4 to 1) and foundation degrees (FDs) (2 to 1). On HNDs/HNCs, the bias is the other way around (2 males to every female student). This largely reflects gender imbalances in the sectors and occupations at which these qualifications are targeted (eg women are more dominant in health and social care where DipHEs and FDs in Early Years are more likely to be the relevant qualifications. Men dominate in engineering, manufacturing and construction, where HNDs/HNCs are more likely to be taken

- by *age*: older students (age 21+ on entry) dominate most of the vocational types of HE programme, the exception being HNC/HND where enrolments are more equally balanced between young and older students. On first-degree courses, older students (21+) are slightly in the majority

- by *mode*: part-time study is much more likely on some, though not all, non-degree programmes. FD students are split almost equally between full- and part-time study, HNDs/HNCs are more likely to be full-time, and first degrees are much more likely to be taken full-time than part-time (ratio of 9 to 1).

Qualification group	Female	Male	Under 21 on entry	21+ on entry	Full-time/sand-wich	Part-time
First degree	53.6	46.3	55.2	44.8	89.7	11.3
DipHE/Cert HE	76.1	23.4	10.3	89.7	39.3	60.6
Foundation degree	66.4	33.6	26.3	73.7	51.0	49.0
HND/HNC	36.1	63.9	46.5	53.5	64.8	35.2
Other undergraduate qualification	65.1	34.9	5.6	94.4	8.2	91.8
Professional study/courses	83.7	16.3	10.5	89.5	48.2	52.8
Other	60.9	39.1	4.3	96.7	2.1	97.3
All at undergraduate level	57.6	42.4	38.5	61.5	63.5	36.5

Table 2.5 Undergraduate students by gender, age on entry and mode of study in HEIs in England in 2002/03

Source: HESA (part of special HESA data run for project, via LSDA)

2.4.1. Highest entry qualification to higher education

Various reports have highlighted the broadening of the HE student population and in particular, the growing percentage of people holding qualifications other than A-levels. However, although this route is much more popular in some programmes, overall it is still very much a minority route, and especially so for young people entering full-time degree courses at universities (see Connor and Dewson 2001; Gayle, Berridge and Davies 2003; Schwartz 2004). The A-level route is overwhelmingly the route taken to the more academic, highly selective degree courses at pre-1992 universities. But a range of other undergraduate-level programmes, including HNDs and HNCs, have always been more likely to be important destinations for vocationally qualified people.

The new FDs are intended to attract primarily this vocationally qualified group plus others in work, and it appears that the highest demand for them is coming from people aged 21+, the group who are less likely to apply to go into higher education with an A-level qualification (though the pattern varies across the country). The latest published HESA data on first-year FD students in 2002/03 shows that the majority (71%) were aged 21+; 38% of them were much older – aged 30 years and over (HESA 2004). A majority of these mature first-year students (aged 30+) were female.[3] Both HND/HNC and FD programmes enable learners to progress to honours degrees by taking an additional year (or more) of study. There is also a range of Access to Higher Education courses, some focused on particular occupations (eg Access to Nursing), which serve as entry to HE programmes, while many universities offer Foundation courses (Year 0) prior to the first year of degree programmes.

Data from HESA on the highest qualification of students entering undergraduate programmes (at HEIs in England), which was requested as part of this project, confirms these points, but also shows a more varied pattern than is perhaps often realised. This is illustrated in **table 2.6**, which shows highest entry qualifications for first-year students; and in **figure 2.2** which shows highest entry qualifications for home-domiciled first-year

[3] It should be noted that this HESA data covers the UK, but does not include FD students in FE colleges, and also includes some non-UK-domiciled students; this is a slightly different base from the data we obtained in our special run from HESA, which covered English HEIs and UK-domiciled students only, so figures look slightly different.

students (around 700,000 in total) in HEIs in England in 2002/03, on different types of programme.

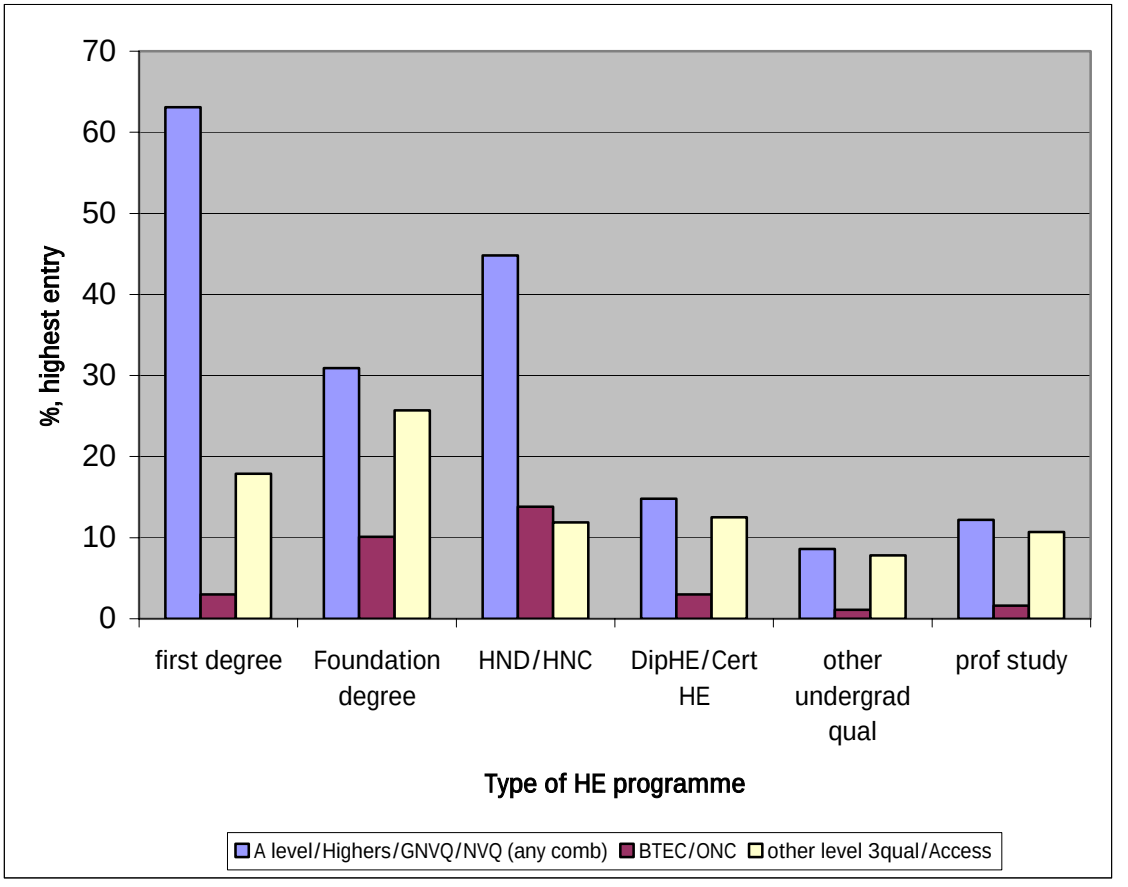

Figure 2.2 Highest entry qualifications of first-year students in HEIs in England in 2002/03

Source: HESA (part of special HESA data run for project, via LSDA)

It was disappointing to find that the classification used in the HESA data set initially provided to us on highest entry qualification combined A-levels/Scottish Highers with AVCEs, GNVQs and NVQ Level 3 into one group – students holding any combination of A-levels/Scottish Highers/AVCEs/GNVQs/NVQ Level 3 as their highest qualification. This meant that it was not at first possible to distinguish clearly those with A-levels or Scottish Highers only from those with vocational or other qualifications only. The main difficulty when attempting to divide out the qualifications in this way is that many people hold combinations of Level 3 qualifications; for example, one A-level plus an AVCE. However, given the national policy drive to increase the use of vocational routes into higher education, work has now been started on disaggregating this data group, and we have been able to incorporate the preliminary findings in **section 2.4.3**. In the longer term, however, it will be important to be able to distinguish such routes in published data as one measure of the success of such policy drives.

Notwithstanding these current limitations, it is interesting to note that although this group (holding any combination of A-levels/Scottish Highers/AVCEs/GNVQs/NVQ Level 3) represents the single largest category of entrants to higher education (at 42%), it still accounts for less than half of all entrants to undergraduate-level programmes (ie broadly Level 4; see definition above). Almost one quarter have previous HE experience or Level 4 qualifications and the remainder a variety of qualifications, including vocational ones such as BTEC/ONC or professional qualifications of one kind or another. It is perhaps

rather surprising that so many have previous HE/Level 4 qualifications (and so are taking a second HE qualification or had already started Level 4 study earlier and stopped), but as **table 2.6** shows, this group is more likely to comprise students on 'other undergraduate' study (almost half of them have previous HE/Level 4 qualifications), a category that contains a variety of programmes, including short courses and Open University (OU) modules.

Qualification group	A-levels/Highers/ AVCEs/ GNVQs/NVQs (any combination)	BTEC/ONC	Access/ foundation course	Other Level 3 qualifications	Previous HE/ Level 4+	Professional qualifications	Other
First degree (307,399)	63.1	3.0	6.3	5.5	12.4	2.4	7.2
DipHE/Cert HE (17,873)	14.8	3.0	5.8	6.7	26.3	22.8	20.9
Foundation degree (7202)	30.9	10.1	4.8	20.9	12.6	8.9	20.9
HND/HNC (21,166)	44.8	13.8	3.1	8.8	13.5	2.5	13.6
Other undergraduate qualifications (47,134)	8.6	1.1	1.4	6.4	48.7	13.5	20.3
Professional study/courses (39,929)	12.2	1.6	5.7	5.0	31.5	31.8	12.2
Other (105,406)	7.2	1.0	0.3	6.6	27.6	31.6	25.7
All at undergraduate level (ie broadly Level 4) (546,109)	42.1	3.2	4.6	5.3	23.3	8.3	13.2

Notes:

The figures in the rows are percentages of first-year students.

See **appendix 2** for coverage of qualification groups.

Unknowns have been excluded – for example, the highest qualification was unknown for 88,000 students so was excluded from the figures above, and students on NVQ Level 4 or NVQ Level 5 programmes were also excluded since numbers were so low (only 700 altogether).

Table 2.6 Highest entry qualifications of first-year students on undergraduate programmes in HEIs in England in 2002/03

Source: HESA (part of special HESA data run for project, via LSDA)

This overall picture masks a varied pattern across the different kinds of programme.

- The dominance of the A-level/Scottish Higher/AVCE/GNVQ/NVQ route to degree study (63% of first-year students) is particularly noticeable. It is also important, though not a prime entry route, as an entry qualification to HND/HNC (45%) and to FDs (31%).

- By contrast, students on 'other undergraduate' programmes, professional study and other programmes are much more likely to enter with a Level 4 qualification (ie to not be 'first-time' Level 4 students). It seems, therefore, that there are substantial numbers of students (with previous HE experience/HE qualifications) who are making sideways moves rather than the more traditional upwards progression often expected.

- FD programmes appear to be recruiting from a wider pool than degree or HNC/HND programmes on average. It is also noticeable that around a fifth of those recruited to FDs have 'other' qualifications (classed as 'not at Level 3, most likely to be lower-level, or overseas, qualifications'). This means that there is a higher percentage of this 'other' category recruited to FDs than to first degrees (7%) or HND/HNCs (14%).

- Although NVQ Level 4 and NVQ Level 5 have been excluded from **table 2.6** because numbers are so small (only 700 altogether), the vast majority of first-year students on NVQ Level 4 or NVQ Level 5 programmes have either professional or other qualifications or previous HE experience/Level 4 qualifications.

2.4.2 Student profiles

There are significant differences in the *age* profile of students on different programmes. This is not surprising given the earlier discussion in **section 2.2.2**, especially on the academic/vocational divide between young and adult Level 3 achievers. Looking at the differences by age in the entry qualifications of students on the various HE programmes in **figures 2.3a** and **2.3b** (and **table A1** in **appendix 2**), several key conclusions about student age and choice of programme can be drawn.

Please note that from this point on, data in this section covers all students, not just first-year students. We have taken this approach to give fuller data. However, broad patterns for first-year students would be expected to be similar.

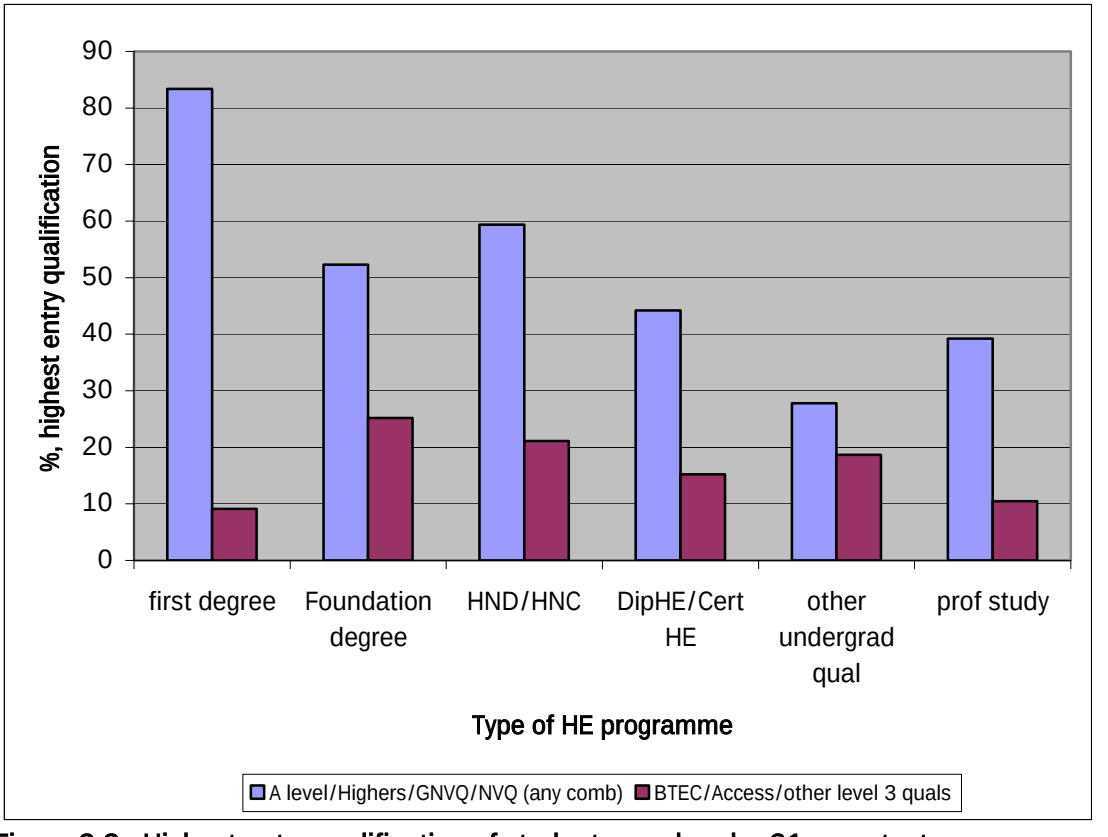

Figure 2.3a Highest entry qualification of students aged under 21 on entry to undergraduate programmes in HEIs in England in 2002/03

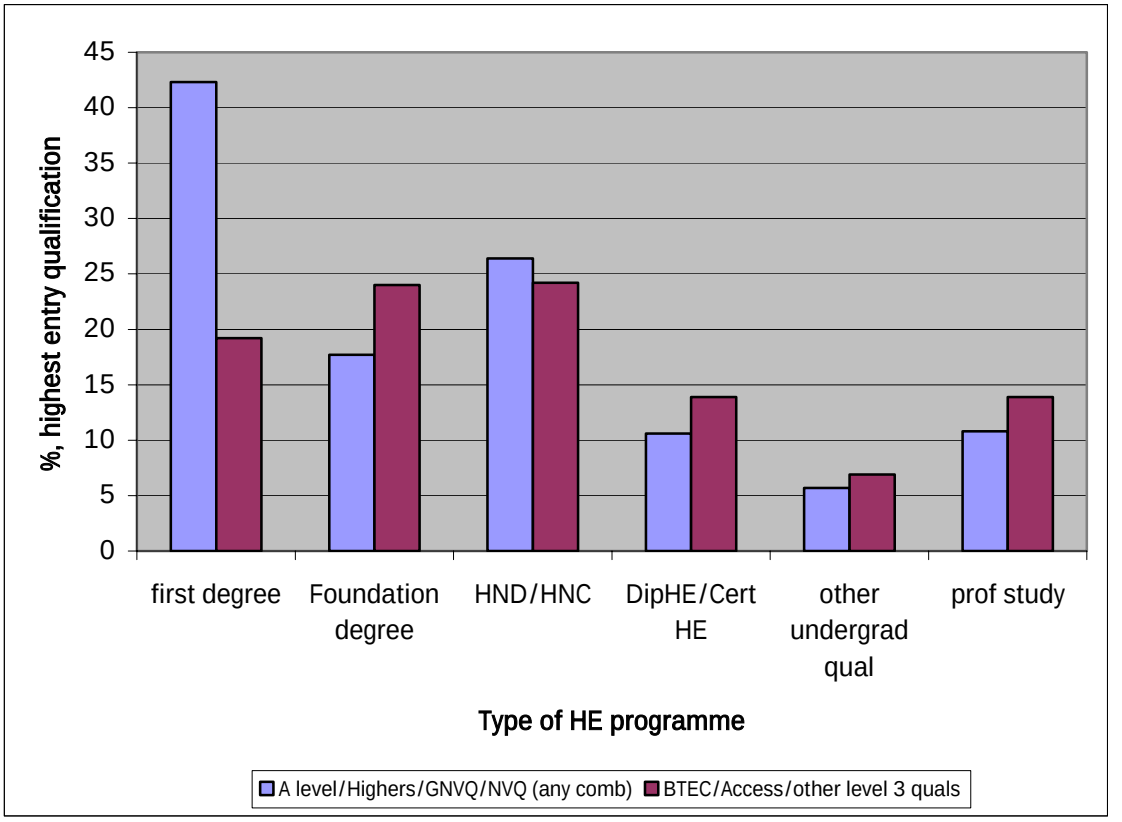

Figure 2.3b Highest entry qualification of students aged 21+ on entry to undergraduate programmes in HEIs in England in 2002/03

The qualification route that combines A-level, Scottish Highers, AVCE, GNVQ and NVQ Level 3 in any combination (see above) is the dominant route for young entrants to degree courses (83% of entrants under 21). For older students (age 21+), it accounts for the minority overall – 42% of them (though still the largest single group).

- A much broader range of qualifications is held by the older degree students. In particular, more are likely to have previous HE/Level 4 (which probably includes many conversions from HNC/HND), to have taken Access courses and to have other qualifications. Those with BTEC/ONC or other Level 3 qualifications, however, seem to make up a relatively small share of the total (see **table A1** in **appendix 2**).

- The combined A-level/Scottish Highers/AVCE/GNVQ/NVQ Level 3 group of entry qualifications is also the most common qualification held by young entrants to HND/HNC, FD and DipHE/Cert HE. But older entrants' qualifications cover a broader range. In particular, one quarter of older FD students have 'other qualifications' (ie not at Level 3 or 4+; see **table A1** in **appendix 2**). Some of these will be Access students and those who have gained entry through institution-specific accreditation of prior learning (APL) arrangements.

There are also differences by mode of study, which correlate strongly with age: older students and work-based students are more attracted to part-time qualifications, so we would expect differences in entry routes between full-time and part-time study. These are shown below in **figures 2.4a** and **2.4b** and in **table A2** in **appendix 2**.

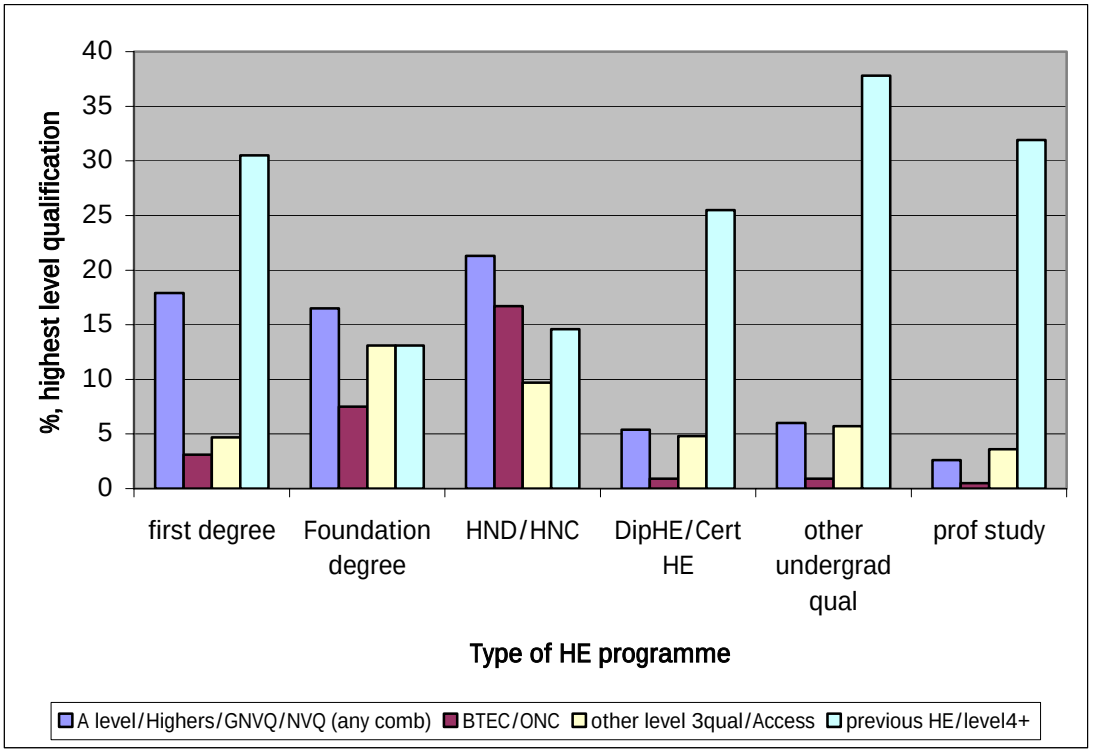

Figure 2.4a Highest entry qualifications of part-time HE students in England in 2002/03

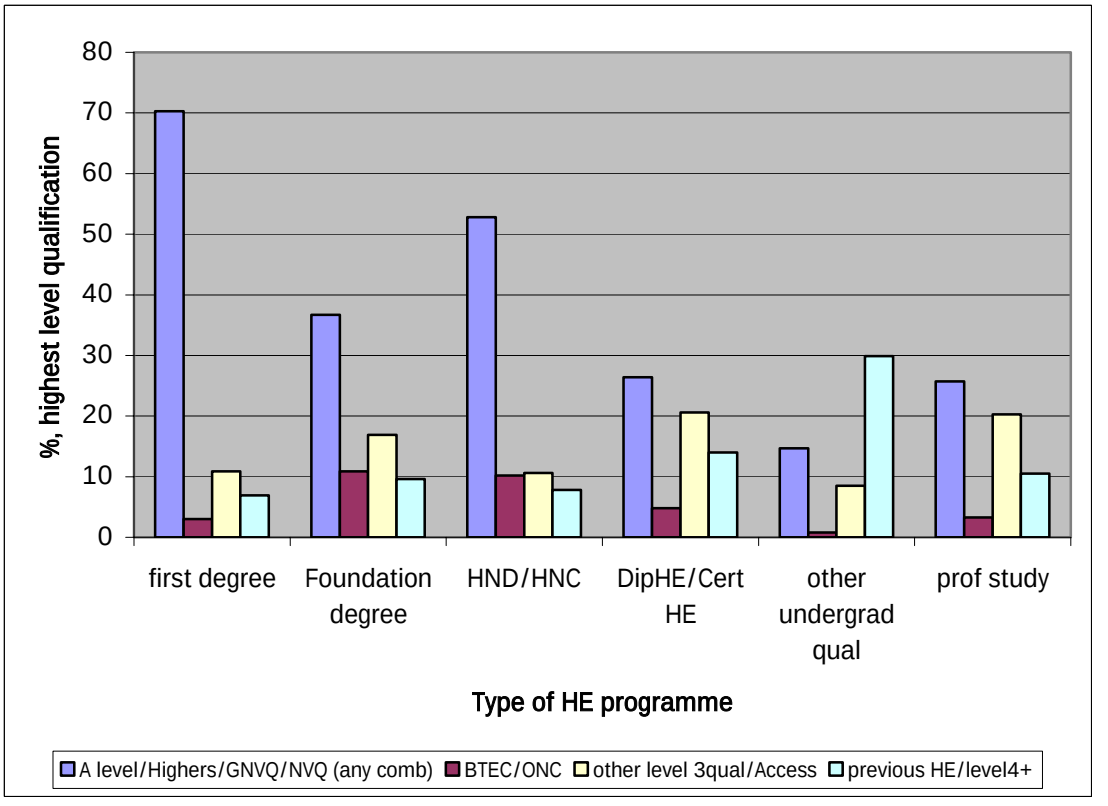

Figure 2.4b Highest entry qualifications of full-time HE students in England in 2002/03

- Overall, almost half of part-time undergraduate students enter with previous HE experience/Level 4+ qualifications. A further quarter enter with a professional qualification or a qualification from the 'other' category, which includes qualifications lower than Level 3, no qualifications, or a non-UK qualification (see **table A2** in **appendix 2** for detail). Almost one in five entering part-time degrees come via the academic route (ie A-level group), compared with one in 10 of all part-time students. Access courses account for a relatively small proportion of part-time degree entrants (5%).

- By contrast, over half of full-time undergraduate students enter with academic qualifications, with only a further fifth having previous HE experience/Level 4+ qualifications. But almost three-quarters (70%) of full-time first-degree students have academic entry qualifications. Almost one third of part-time first-degree students have previous HE experience/Level 4+ qualifications, compared with only 7% of full-time degree students (see **table A2** in **appendix 2** for details).

- Part-time FD students have a wider range of entry qualifications. One quarter have 'other' (ie qualifications lower than Level 3, no qualifications or non-UK qualifications) and one in six has A-levels/Scottish Highers/AVCE/GNVQs/NVQ Level 3 (see **table A2** in **appendix 2** for detail). By contrast, one third of full-time FD students came onto their courses with A-levels/Scottish Highers/AVCE/GNVQs/NVQ Level 3 and although the remaining two-thirds were spread over a range of entry qualifications, a lower percentage (15%) has 'other' entry qualifications compared with full-timers.

- Part-time HND/HNC students are the most likely group of all to have BTECs/ONCs as their highest entry qualification (17%), but the academic qualification route makes a greater contribution (21% of part-time HND/HNC students are in the A-level/Scottish Highers/AVCE/GNVQ/NVQ Level 3 group). Full-time HNC/HND students are more likely to have academic qualifications (53% of total), while around 10% of this group have BTEC/ONCs as their highest entry qualification.

  Entry qualifications also vary according to subject studied. As shown in earlier research for LSDA (Little *et al.* 2003), there are several subjects where certain types of programme are much more likely to be found than others; for example, DipHEs in subjects allied to medicine; professional qualifications and HNDs/HNCs in business and administrative studies; HNDs/HNCs in engineering and technology.

  As would be expected, then, there is a considerable degree of diversity in entry qualification for different subjects at higher education (see **tables A3, A4, A5** in **appendix 2** for more detail). To highlight contrasts, some of the main subjects are shown in **table 2.7**. Various patterns in entry qualifications are outlined below.

- *Degree students*: the A-level route (which is the dominant route overall) is less likely among subjects allied to medicine and education. Education, engineering and computing science are the most likely subjects to have degree students with BTECs/ONCs as their highest entry qualification

- *HND/HNC students*: the A-level route, though less dominant among HND/HNC students than among degree students overall, still tends to be the main route into most subjects taken by HNC/HND students. The main exception is engineering, where BTEC/ONC qualifications are held by almost one third of the HND/HNC students, a much higher proportion of the engineering total than for other subjects.

- *Foundation degree students*: the significance of the A-level route varies considerably – it is highest in computing science, engineering and business; and lowest in social studies and education. Again, the BTEC/ONC entry qualification is more common in engineering than in other subjects. Other Level 3 qualifications are more significant in subjects allied to medicine, social studies and education than in other subjects shown.

Entry qualification →	A-levels/Scottish Highers/ AVCEs/GNVQs/ NVQ Level 3 (any combination)			BTEC/ONC			Other Level 3 qualifications		
Programme taken → / Subject studied ↓	Degree	HNC/HND	Foundation degree	Degree	HNC/HND	Foundation degree	Degree	HNC/HND	Foundation degree
Subjects allied to medicine	46.4	49.2	37.5	0.4	11.2	3.6	2.7	7.8	17.1
Computing science	67.9	52.7	41.6	4.0	8.8	4.4	4.4	9.0	8.7
Engineering	61.6	24.6	41.7	4.5	30.3	18.8	5.5	7.9	6.4
Social studies	69.7	48.3	18.2	1.4	10.9	9.9	6.5	9.7	19.0
Business and administrative studies	67.1	61.3	43.1	1.7	5.1	3.8	5.8	8.2	9.2
Education	58.8	57.1	17.8	6.2	15.6	7.7	4.8	6.6	16.8
All subjects (average)	**67.7**	**46.6**	**26.7**	**3.1**	**14.1**	**9.2**	**4.8**	**8.3**	**10.7**

Note: figures shown are percentages and reflect the different entry qualifications of students in each programme and subject; for example, in Column 1, 46.4% of degree entrants in 'subjects allied to medicine' have 'A-level combined' as their highest entry qualification. Percentages are based on totals which exclude unknowns. Only six subjects are shown due to lack of space. However, the six subjects chosen are those considered more likely to have vocationally qualified entrants (see **tables A3, A4** and **A5** in **appendix 2** for further subject analysis).

Table 2.7 Principal subject studied by undergraduate students with Level 3 qualifications in 2002/03

Source: HESA (part of special HESA data run for project, via LSDA)

2.4.3. Disaggregated data

As highlighted earlier (**section 2.4.1**), new data splitting out the 'combined' group of Level 3 entry qualifications became available towards the end of our project and we were pleased to have been one of the first groups to see and interpret it. This new set of data, provided by HESA, included a new field called 'specified highest entry qualification', from which we were able to distinguish students who had only one type of Level 3 qualification, and not a combination of qualifications as discussed above. This produced the findings outlined below.

- *Among first-degree first-year students*: 42% had A-levels only and just 1% had AVCEs only. Subtracting these from the total of 63% in the combined A-level/Scottish

Higher/AVCE/GNVQ/NVQ Level 3 group (see **table 2.6** for degree students) shows that just 21% of first-degree entrants had a mix of A-level and vocational qualifications.

- *Among foundation degree (FD) first-year students*: just 6% had A-levels only as their highest qualification and just 1% had AVCEs only. Subtracting these from the 31% in the A-level combination group (**table 2.6**) shows that an estimated 24% of entrants to FDs had mixed A-level and vocational qualifications.

- *Among HND/HNC first-year students*: just 12% had A-levels only and 4% had AVCEs only. Subtracting these from the 45% in the A-level combination group (**table 2.6**), shows that 29% had a mix of A-level and vocational qualifications.

Since this new data set was only recently released and given our initial findings based on the new data, we recommend that further analysis of this disaggregated data is undertaken by the LSDA.

Clearly, there are difficulties in classifying entry qualifications when such large numbers of students have combinations of different qualifications (at Level 3 and also at lower levels). However, we feel there is a need to give more attention in the future to improving the recording and analysing of entry qualifications in the HESA student record (and other relevant data sets), so that good-quality monitoring data is available to measure progress in widening participation to students entering with different entry qualifications.

2.5. Summary of key findings and recommendations

This section has presented a quantitative picture of vocational progression pathways. The key messages are as follows.

- The pool of people of all ages who are qualified to Level 3 is large. Level 3 achievement is more likely to take place by a person's early 20s than by age 19 and Level 3 vocational or work-based learning is predominantly undertaken by adults (aged 19+). By contrast, young people (under 19) are predominantly following academic rather than vocational/work-based education routes.

- There are weaknesses in the available data on the size and pattern of the flow from Level 3 to Level 4. Only the data on young people is sufficient to assess the relative importance of the academic and vocational routes. This shows the dominance of the academic route (ie A-level qualifications) over the vocationally qualified route for young people. Several other research studies (Gayle, Berridge and Davies 2003; Payne 2003; Brown, Corney and Stanton 2004) have shown how choices at age 16 about vocational or academic pathways and going on to higher education by age 21 are strongly influenced by earlier educational attainment at school.

- In terms of adults, there is inadequate data available to make a reliable assessment of the significance of different types of qualifications or work-based routes from Level 3 to Level 4 programmes.

- There is adequate data available, however, on the flow of both adults and young people in terms of entry to undergraduate study at HEIs (which represents much of formal learning at Level 4). This analysis, from national HESA student data sets, shows that the A-level/Scottish Higher/AVCE/GNVQ/NVQ Level 3 route still accounts for the largest percentage of first-year entrants. However, when added together, the other entry qualifications outnumber the combined A-level route. However, overall figures mask a great deal of diversity. For example, A-level/Scottish

Higher/GNVQ/AVCE/NVQ Level 3-qualified entrants make up nearly two-thirds of the total on first-degree courses, but less than one third of the entrants to foundation degrees; and less than one sixth of those on professional study programmes, DipHE/Cert HE and a range of other non-degree qualifications. Different patterns are also seen among young and mature entrants, and by gender, subject and mode of study (often interrelated) on the various types of undergraduate programme.

- Only very small numbers of undergraduate first-year students have vocational qualifications, such as BTEC National Diplomas or Certificates or other (ie non-A-level) qualifications at Level 3, but this group represents a larger proportion than average on most non-honours degree programmes of study, including HND/HNCs and foundation degrees. There are also significant numbers who enter undergraduate-level study with higher-level qualifications or HE experience already, thus indicating the importance of sideways moves. This is more likely to be the case for students taking professional study or 'other undergraduate' programmes (eg short courses, OU modules) than those aiming for first degree, foundation degree or HND/HNC qualifications.

- As we expected, older undergraduate entrants were shown to have a much broader range of qualifications than young entrants, as were those on part-time rather than full-time modes of study. In particular, part-time FD students entered with a range of qualifications, including one quarter with qualifications 'lower than Level 3, no qualification, or a qualification from overseas', a higher percentage than in any other qualification taken by part-time study. This suggests that new part-time FD programmes are indeed attracting a wider range of people into HE programmes than previously.

- A great deal of diversity is evident also by subject area, both in the profile of the student population and in their highest entry qualification (often linked). Among degree students, the A-level route is less prevalent in subjects allied to medicine and in education, while BTEC National Awards are more prevalent as an entry qualification among engineering students (the same is true for HND/HNC and FD engineering students).

- Finally, looking at progression from apprenticeships to HE courses, we found very limited data available on this specifically (and none from the HESA student data). AMA leavers appear to make a very small contribution to HE entry at present. However, there is no information available on any progression to higher education which might take place a few years after AMAs have been completed. If AMAs are to have a greater role in the future, then this role must be clarified and the apprenticeship route given a higher profile as a potential progression pathway (with improvements made to completion/achievement rates).

Recommendations on data

Given the lack of information on progression from Level 3 to Level 4 outside the traditional HE route (young people and academic qualifications), it has been difficult in this section to capture statistically the whole of the progression picture. In particular, it has been hard to establish a clear picture on the vocational and work-based qualification routes that are more likely to be taken by adults. We recommend that much greater emphasis is given to improving data in this area in the future, with particular improvements on:

- mapping flows post-16 from one level of learning/qualification to another, especially after age 21
- the destination outcomes of people achieving vocational Level 3 qualifications – whether at colleges in full-time study, in WBL or taking part-time qualifications, or in different sectors for employed students
- the destination outcomes of students by subject of award and by age (under/over 19 years)
- the quality of information on AMA progression routes, particularly on those who proceed from AMAs to Level 4 (and also from FMAs to AMAs); we need to know more about individuals' choices of Level 4 study, how soon they progress to Level 4 after completion of the AMA framework, the type of institution chosen and the modes of study, whether they stay in work (earn and learn) and whether they are supported or not by their employers
- the participation and achievement of adults (ie aged 19+) at Level 3, including those outside formal learning programmes in companies and non-LSC-funded WBL programmes
- the participation and achievement at Level 4 outside the HEI sector – that is, in FE colleges and in corporate programmes. In particular, there needs to be a more comprehensive data collection system covering both HE and FE sectors in England
- the classification of qualifications held by students on entry to undergraduate-level programmes, to give greater clarity to the various vocational, work-based and academic routes, especially where a mix of A-level and vocational qualifications is held by young people. We also recommend that decisions are taken on how ex-AMA trainees should be classified, as they are not currently identifiable in the available national HE data.

Unless action is taken to improve the collection and quality of data, it will not be possible to make judgements on the success (or otherwise) of government policies on VET and initiatives aimed at creating new vocational ladders to higher-level qualifications and skills.

3. Demand and supply in four sectors

3.1. Introduction

In this section, we provide a brief overview of the business context and trends in four sectors of employment, together with an indication of the demand for intermediate and higher levels of skills and knowledge in these sectors and the place of vocational routes in the overall picture of supply and demand. As outlined in **section 1**, we chose four sectors to help broaden our investigation beyond what could be found in the available evidence on progression in the research literature, policy documents and national statistics. The purpose of this section is to set a context for issues discussed in the next sections, which highlight specific inhibiting and enabling factors affecting progression from Level 3 to Level 4; and to draw attention to the different emphases employers place on relevant work experience rather than qualifications when seeking recruits.

Where possible, this section also aims to tease out more detail at a sector level on the supply of people qualified to Level 3 than could be done in the previous section, which presented a mainly aggregate picture. However, it must be acknowledged that there is not necessarily a straightforward match between sector-specific qualifications and employment in specific sectors of the economy. We also found an absence of any systematic tracking systems or summative information available in any of the sectors which could have provided a clear and comprehensive assessment of how many Level 3 holders of different vocational and academic awards progress either to HE study or higher levels of in-company training/job experience.

Our four sectors were chosen as likely to illustrate different kinds of progression from Level 3 to Level 4, and especially experiences of work-based routes. They were:

- agriculture and horticulture
- automotive engineering
- health and social care
- travel services.

In the main, we have drawn our information from the relevant SSC's own workforce development needs analyses and other sectoral reports and from interviews with key people within the SSCs (SEMTA, Lantra, etc), providers in CoVES and others (see **appendix 3** for details of organisations contacted).

3.2. Agriculture and horticulture

This is an extremely diverse sector in terms of the activities (from primary food production to environmental conservation) that fall within the more general land-based industries (Lantra 2001), so it can be difficult to generalise and to distil findings down to just a few key messages.

The sector has been subject to much continuing change in terms of economic, technological and environmental influences. The overall trend has been one of long-term employment decline (particularly in agriculture), but the land-based industries sector still accounts for just under 1m people and contributes over £24bn a year to the UK economy (Lantra 2003). Within this sector, agriculture and horticulture make the largest contribution (at about £15bn per year). There are many new areas of employment, such as rural tourism, leisure industries and retail, but employment in this sector is generally still concentrated in agriculture and production horticulture. In rural areas, the industry can have a major influence on the local economy and associated industries. Although

displaying a very uneven geographical distribution across the UK, in some remote areas, the sector can account directly for almost a quarter of total employment.

Self-employment and small businesses dominate this sector, with just a few large firms. There is a large occasional or casual workforce (an additional 500,000). Owner-managers account for almost 50% of people employed in the sector (compared to only 13% in the workforce nationally) and skilled trades staff account for a further quarter (compared to 14% nationally), though these percentages are forecast to fall for both groups (Lantra 2001). The sector is also characterised by an older workforce (20% are aged 55+), though reliance on older workers varies between industries (eg much higher in agriculture). Historically, there have been low levels of labour turnover, but the situation is now changing (with increased mobility of young workers and increasing numbers of retirements). Neither agriculture nor horticulture attract large numbers of young people into the industry (due largely to relatively low pay and poor conditions of employment). Horticulture, however, appears to be attractive to increasing numbers of 'career changers' (with possible implications for work-based education and training provision).

3.2.1. Demand at Level 3 and Level 4

Though there is variation between parts of the sector, the main trend is for increasing demand at higher skill levels, above Level 2. Traditionally, significant numbers of jobs in this sector have required relatively low skill levels, but this has changed due to moves towards more technological and knowledge-intensive modes of production (and away from labour-intensive methods). Agriculture businesses are also faced with the dominance of multiple retailers in parts of the food market and an increasingly global marketplace. Environmental issues represent a third driver of skills – they play an increasingly important part in agricultural and horticultural businesses nowadays. In the future, it is forecast that skills required will include high-level technical skills, higher levels of business and management skills, better ICT skills and better generic skills (communication, taking initiative, customer care). Moreover, in much of the sector there is little direct supervision (given the high incidence of very small firms): hence the workforce needs to be more self-reliant and self-managed.

According to Lantra (the SSC covering agriculture and horticulture), the supply and demand for workers at particular skill levels is now 'substantially out of balance' (Lantra 2001). The SSC estimated in 2001 that a further 275,000 people will be required to be qualified (or have skill levels) at NVQ/SVQ Level 3 or above. In the past, the industry as a whole has put little emphasis on qualifications when recruiting (and a large proportion of learning in work did not lead to qualifications), with the result that significant numbers of workers (even at managerial level) have no formal qualifications relevant to their work.

3.2.2. Provision at Level 3 and Level 4

Although there are a large number of land-based courses and a plethora of qualifications available (an estimated 100,000 FE students are following land-based courses in the UK and there are almost 1800 agriculture-related qualifications; see Lantra 2001), just 24 qualifications accounted for 40% of enrolments at FE colleges in 1999 (in England). At that time, the most popular individual courses in England were the City & Guilds and the Royal Horticultural Society (RHS) certificates in gardening/horticulture (at levels below Level 3), largely a reflection of the sector's traditional relatively low skills base. Certificates of Competence and National Proficiency Tests (at Levels 2 and 3) also have wide currency in order to meet legislation requirements, and there are many other qualifications available [Lantra 2001, for example, quoted some 204 awards available in horticulture production alone, including over 150 National Proficiency Test Council (NPTC) Certificates of Competence and Proficiency Tests]. There is some confusion within the

sector about the number, type and provision of courses and the number of competing training providers (see Lantra 2003). Lantra is aiming to work through its sector Learning Partnership (LP) to produce a more demand-led system of training to better meet the sector needs, and to provide more coherent, 'one-stop-shop' information about training.

Overall, around 40% of all enrolments at colleges were on courses at NVQ Level 3 or above (Lantra 2001). At Level 3, the RHS suite of qualifications (General Certificate, Advanced Certificate and Diploma) is arguably the most widely recognised in horticulture. But there are also qualifications offered by City & Guilds (National Certificate and Advanced National Certificate in Horticulture) and BTEC (National Certificate/Diploma and HNC/HND), and other diplomas offered by major national gardens (eg Wisley Diploma, Kew Gardens Diploma). It has not been possible to get an accurate figure for the total number taking National Diplomas or Certificates at Level 3, but in 1999, there were 2500 students enrolled in colleges on the National Diploma in Animal Care and 1000 on the National Diploma in Agriculture. College providers reported that students do progress from BTEC National Diplomas to HNDs, but numbers are small and HNDs are considered to be much less practically orientated than they were, say, in the mid-1990s.

Looking at work-based provision at Level 3, some 4300 AMAs have started (since 1994) in the land-based sector, of which 57% were within the agriculture and horticulture framework (around 2400). Completion rates are relatively low: in 2001, 30% of leavers achieved an NVQ Level 3 or higher, but 38% of leavers left with no qualifications. At the lower level, just under 1000 have started on FMAs within the agriculture and horticulture framework and just 30% of them have achieved NVQ Level 2 or higher. As in other sectors, relatively small numbers of AMA leavers have been reported as progressing to higher education.

At HE level, there are a few specialist colleges, although in recent years, several universities have merged with local colleges and created or expanded their agricultural faculties or departments, offering a range of specialist courses at degree and other higher levels. HESA data shows:

- some 12,000 students on courses in agriculture and related subjects (excluding food science) in 2002/03, of which 9300 were at undergraduate level

- in the same year, 2150 first degrees in agriculture and related subjects were awarded, as were 995 HNDs/DipHEs, 20 FDs and 295 'other' awards at undergraduate level.

The full-time university courses mainly attract young people. A number of colleges run successful HNCs (eg in garden design or organic horticulture) on a part-time basis, which mainly attract mature students who often already have higher qualifications. College providers consider that career changers are sometimes more likely to do the RHS intensive courses than to look for more general higher-level education and training (since they are often already qualified with a degree or professional qualification).

Summary

Thus, in agriculture and horticulture we see that:

- the industry is experiencing a long-term decline, yet an increasing demand for higher-level skills brought about by more technological and knowledge-intensive production methods and an increasingly global marketplace

- the industry has difficulty attracting young people

- horticulture is starting to prove attractive to older career changers
- employers tend to place little emphasis on qualifications *per se* when recruiting staff
- there are a large number of education and training courses available, provided by a range of providers, but the industry recognises that it needs to try and create a more coherent, demand-led system of provision
- the apprenticeship framework attracts relatively small numbers; completion rates are low and very few young people progress via this route to higher levels of education.

3.3. Automotive engineering

The sector focus for the study was on automotive manufacturing rather than vehicle services industries (garages, repair). It is dominated by a few large global players (eg BMW, Ford, Toyota), each with supply chains of small specialist sub-contractors. Half of the sector's employment is in large establishments (500+ employees), with the remainder spread across a large number of smaller businesses. There are also some interesting smaller niche players; for example, in motor sports. Traditionally, the automotive engineering sector has been focused in the West Midlands and still is to some extent, but new foreign investment has been channelled into other areas of England, including the East Midlands, the North East and the South East.

Like agriculture, this sector has also been subject to major contraction over many years, which has meant reduced employment levels – down to around 200,000 by 2003 (Annual Business Inquiry 2003). But it still plays a significant role in UK engineering (representing one in seven of the total 1.4m people employed in engineering manufacturing industries). Reduced size, together with economic and structural upheaval, has meant that the sector has dramatically transformed its appearance since the mid-1990s. Key business pressures at present are:

- intense competition – leading to a need to keep a close eye on costs, productivity, quality standards and customer service
- globalisation – in markets and a supply chain operating across international borders and using international languages
- investment in and exploitation of new technology – for example, robotic technology and automated production lines, new composite materials
- modern working practices – reflected in the demands put on its workforce to be highly adaptable and efficient.

Although subject to economic pressures, there is a strong commitment throughout the industry, especially by the large employers, to invest in employee development and a tradition of valuing engineering qualifications.

3.3.1. Demand at Level 3 and Level 4

Overall, although employment demand in the sector is on a downward trend, this is less so at the higher skills end. There has also been a long-term shift in the balance of employment towards technician and professional occupations (Level 3 and Level 4). However, due to employee replacement (eg retirements, other leavers), there is a continuing healthy demand for new recruits at Level 3 and Level 4.

Demand in automotive engineering is highest for people qualified as graduate engineers (Level 4) with honours degrees, and as higher-level technicians (upper end of Level 3) with HNCs and HNDs and new FDs. Recruitment of apprentices (the main work-based qualification at intermediate level) is also expected to need to grow, but SEMTA (the SSC covering this area) forecasts a likely shortfall by 2005 (SEMTA 2003). Similarly, at higher levels, shortages are forecast – for example, the Engineering Council has estimated that 75,000–100,000 chartered engineers will be needed over the next 10 years, but fewer than half that number seem to be currently embarking on such careers. Although these estimates of future demand cover all engineering, rather than just the automotive sector, they reflect the main likely demand trends there too.

The increased use of ICT and electronics in products and processes in automotive engineering means that there is an increasing demand for graduates and sub-graduates to be qualified in these subjects as well as more traditional disciplines (like mechanical engineering). There is also a greater emphasis on 'soft skills', required in team working; and on multi-tasking and multiple responsibilities (eg for production, quality control and maintenance) as part of an individual's job. Individuals are expected to work flexible hours and to take on higher levels of personal responsibility.

3.3.2. Provision at Level 3 and Level 4

Engineering courses are numerous and widespread in colleges and universities and there is a variety of engineering vocational awards that can be taken. Because of this variety and the changes which have been introduced in VET since the mid-1990s, it is difficult to find comparable data to establish trends, particularly the relative significance of the different qualifications.

In summary, NVQ/SVQs are now well established as the main qualification below Level 4 for employees in automotive engineering. Over the years, most qualifications at Level 2 in engineering have been effectively replaced by NVQ/SVQs (eg City & Guilds awards). NVQs at Level 2 and Level 3 are awarded as part of MA frameworks. In addition, at Level 3, there is the Engineering GNVQ, now replaced by the AVCE, which is now establishing itself as a route to engineering higher education (it is taken in schools as well as in colleges). This AVCE may compete with the more established BTEC National Certificate for the part-time student market. Since 2000, further flexibility has been introduced as GNVQs, and now AVCEs, can be taken in smaller units in conjunction with A-levels or other qualifications. There are also several BTEC National Diplomas in engineering subjects, mainly taken full-time at colleges.

Of all the engineering sectors, motor vehicle engineering has been one of the highest users of NVQ/SVQs (SEMTA 2003). But employees of large firms are more likely to hold such qualifications than employees in small ones (and automotive engineering is dominated by a small number of large organisations, so this may be part of the reason). Figures on NVQs are not collected separately for the automotive sector of engineering, but for engineering as a whole, Level 2 NVQ/SVQ registrations far outnumber any other level. Some 7000 registrations for Level 3 NVQ/SVQ are recorded in engineering production, technical services and engineering maintenance (the most relevant areas to the automotive sector). Since 1999/2000, Level 3 registrations in engineering subjects have been dropping, with the main decrease (numerically) occurring in engineering production. This is likely to be a reflection of recruitment pressures on manufacturing. Level 2 registrations have remained broadly stable. However, there has been a small increase in Level 3 certifications over the last year, indicating a move from Level 2 to Level 3.

Engineering AVCEs stood at around 400 in 2003, a slight increase on 2002. BTEC National registrations for engineering have always been far more numerous than GNVQ or AVCE registrations, but they have also been falling and in 2002/03 stood at 13,000.

The apprenticeship system has always had a special place in engineering, and the MA framework is well established. In 2002/03, there were 4000 leavers from AMAs in engineering manufacture, some of whom will have achieved an NVQ Level 3. Currently, the AMA completion rate for all of engineering, technology and manufacturing is 46%, which is one of the highest of all sectors (the average is 32%). This represented 7000 AMA completions by 2002/03 (there are no figures separately available for the automotive sector).

Traditionally, there has been encouragement of good apprentices to progress onto HNCs and degree courses, and this still continues, though to a lesser extent than in the past (due mainly to budgetary constraints, reorganisations, etc), but there is no data systematically collected to estimate the relative significance of this route. There have also been some pilot Adult Apprenticeship (AA) programmes run by some of the large automotive manufacturers to meet a demand for more skilled workers and for upskilling workers from the shop floor. However, such numbers remain quite small (partly because of the high cost involved for employers and because they cannot draw down public funding for these programmes).

A recent survey of engineering apprentices found high levels of satisfaction with their training to date and showed how they felt about opportunities to progress. Forty-two per cent of AMAs (in second or later years) felt that it was very important to have opportunities to gain further qualifications, such as a degree, once they had finished their apprenticeships; and a further 38% said it was quite important (Berkeley 2004).

At Level 4, engineering honours degree courses have traditionally formed the major supply, along with the established HND and HNC courses, the latter still being attractive to many employers. Several new FDs in engineering (some with automotive specialisms) have recently been introduced. NVQs at Level 4 are still relatively rare, but are increasingly taken by engineering undergraduates and graduates as part of WBL/skill development. According to our specially commissioned data from HESA (see **section 2.4**), in 2002/03, there were approximately 800 students (in England – home-domiciled only) on FDs in engineering and 80 in technology (broad subject areas). This compares with almost nine times the number (7000) on engineering HND/HNC courses (and 800 on technology HND/HNCs). The comparable figures for first-degree students were 57,000 and 7000 respectively.

A key trend in engineering degree study is its declining share of the total undergraduate population, which has been apparent for some time. However, the overall engineering student population has been rising slightly in recent years. Electronic engineering showed the largest increase, and mechanical and production engineering the largest decrease. Numbers graduating in engineering have fallen to around 20,000 degree and 5000 HND/HNC/other undergraduates in 2002/03. Within this total, around 7000 are qualifying through part-time study (these will be mainly people already in engineering employment), of which 3000 are HND/HNC/other undergraduates.

3.3.3. Summary

Thus, in automotive engineering we see that:

- there is a long-term decline in overall employment levels, but an increasing demand for higher-level skills due to an increasingly competitive national and global market, more intensive use of technology in production processes and the need for a more flexible, adaptable and efficient workforce

- demand is highest for people qualified as graduate engineers and higher-level technicians and recruitment of apprentices is also expected to grow, but there is evidence of continuing skill shortages at Level 3 and Level 4

- there is a well-established tradition of valuing engineering qualifications, both in recruitment and in employee development

- the MA framework is well established and has one of the highest completion rates of all sectors; NVQ/SVQs are the main qualifications below Level 4

- there is a tradition of employers encouraging apprentices to progress to higher levels, but this route is small (and likely to have declined compared to, say, the mid-1980s).

3.4. Health and social care

This comprises a number of sub-sectors – healthcare, social care, early years education and other subgroups – but they are increasingly overlapping or being linked together in policy development (eg in joint planning frameworks). The sector covers a wide range of occupations and, in particular, a variety of professional groups. For the purposes of this study, it was decided to focus on the health and social care sub-sectors and not to cover early years (partly because this area was more likely to be seen as part of education and partly for budgetary reasons).

Both the health and social care sub-sectors are very large sectors of employment, providing statutory, private and voluntary provision. Health has about 2m employees and is dominated by the public sector (NHS Trusts), but also has a range of smaller private sector employers (eg private hospitals, nursing homes) and voluntary bodies. Social care, with around 1.5m employees, is made up of a mix of public employers (mainly local authority social services departments) and private and voluntary organisations (mainly care homes). The latter now make up a considerably larger share of total employment than the public sector (though these private employers are strongly influenced by statutory requirements).

Both sub-sectors are currently subject to multiple changes and many policy developments, which have an impact on the workforce and on skills. These include:

- increasing regulation and the need to improve quality standards generally (linked to improving productivity and giving value for money) – in particular, legislation on minimum care standards and other social services

- development of national qualification standards for people at different levels (in social care)

- a blurring of traditional role boundaries between health professional groups and the development of multi-professional teams.

Considerable investment has been poured into workforce planning and workforce development, especially in the public sector, to improve the overall skills base and service standards. It is evident that government legislation has been a factor driving demand here (eg the Care Standards Act 2000, which requires minimum levels of qualified staff in different kinds of establishment). Private sector employers are making slower progress in skills improvement, especially in social care, for a number of reasons (eg many very small companies, high costs of training and small budgets, a weaker tradition of training and limited in-house resources). There are problems of recruitment (especially among nurses) and of high staff turnover generally. Female employees at lower levels dominate both sectors' workforces.

3.4.1. Demand at Level 3 and Level 4

In both health and social care, there is growing employment and growing demand for qualified staff and higher-level skills. In social care, the need for more of the staff working at higher levels to be qualified (eg care home managers) is significant and driven in a major way by government legislation – namely, the Care Standards Act 2000. A report by the Training Organisation for the Personal Social Services (TOPSS 2000) found that 80% of the workforce in health and social care had no qualifications. This demand has resulted in an increased growth of non-standard Level 4 students (ie older people; work-based routes into higher education). This growth is expected to increase. In health, there has been growth in demand for nurses and midwives in particular, but also for scientific health professionals and other health professionals (Department of Health 2003a, 2003b).

An important trend has been the growth in new occupations at intermediate/higher level – assistants to professional practice, known as associate health professionals (AHPs) or assistant practitioners – brought about by changes to front-line health services delivery. New FDs are considered to be a key supply route for meeting this new demand. There are also changed roles for many AHPs (eg in use of medicines) and a need for them to have a broader skills mix.

Skill improvements in staff have been identified as a requirement at all grades in social care, but especially at basic levels. Historically, in social care, training leading to qualifications has been restricted to groups such as nursing staff, childcare and social workers – elsewhere, take-up of qualifications has been low. It was recently estimated that only around 20% of employees had a relevant qualification for their job (Gospel and Thompson 2003). Particular social care roles identified as suffering from skills shortages (eg by TOPSS 2000) include managers at all levels, occupational therapists, social workers and others in particular work areas. In health, there have been significant shortages of nurses and midwives for many years, while more recently, shortages have been experienced among other healthcare professions (eg radiographers, physiotherapists).

3.4.2. Provision at Level 3 and Level 4

NVQs are now well established in the sector and increasingly are the qualification preferred by employers for lower-level staff (up to Level 3) and some managers (Level 4), because of the mandatory requirements of the Care Standards Act 2000. They link into government targets on national qualifications standards in the sub-sectors. Many colleges offer NVQs at Level 3 and below in health and social care and these have replaced many other awards. However, there is a vast array of qualifications associated with care and health occupations, which makes mapping supply a complex process. There is also a range of providers of education and training in health and social care –

colleges, universities, employers (eg care sector trusts) and private providers – the mix of provision varying from region to region.

At Level 3 and Level 4, the main care-related qualifications include:

- Care NVQs Level 3 and Level 4, Management NVQ Level 4, Health and Social Care AVCEs, BTEC National Awards, Diploma in Social Work (DipSW), BA degrees in social work, child studies, early years, etc.

In health, the main qualifications include:

- BTEC National Awards in applied sciences, pharmacy sciences, etc; Access courses for nursing and health professions; AVCEs in sciences; various certificates in professional areas (eg ophthalmic dispensing); BA and BSc degrees in medical sciences, health studies, etc.

In both sub-sectors, there are a number of new FDs (eg in pharmacy or broader healthcare sciences, or health and social care with routes into radiography, physiotherapy, etc).

In addition, a range of short courses with qualifications at Level 3+ have been developed at a local level.

Within the health professional groups, high academic entry qualifications (A-level scores) are still generally the norm for entry to HE study (Level 4), especially in competitive subjects like physiotherapy. Moreover, professional bodies (which are often regulating bodies; eg dental technicians, pharmacists) exert a strong hold on traditional entry routes to higher levels of education and training. One of the main developments on the supply side in health has been to change nursing training so that it has become a Level 4 qualified profession (ie it has changed from practice-based training involving workplace trainees to one with HE students gaining undergraduate diplomas). This has shifted the balance towards a full-time study route for entry to nursing, arguably fuelled by the availability of Department of Health bursaries for nursing students.

However, there are still various work-based routes aimed at employees – for example, healthcare assistants (HCAs) – which are being encouraged in many places; and also various employer–education partnerships designed to meet shortage problems (such as return-to-practice programmes, Access to Nursing HE courses); and also cadetships, aimed at the 14–16 age group. Other programmes (though less common than for nursing) are aimed at other health and social care professions. These include careers promotion/better information to schools and more recently, new work-based in-house schemes (eg NHS Skills Escalator programme). Apart from nursing (which has moved more to full-time study), training in health and social care has tended to move away from day release at local colleges to more localised training involving NVQ units.

Enrolments have been growing for most of the main national qualifications in care at NVQ Level 3 – for example, Care, Diagnostic and Therapeutic Support, Operating Department Practice, Caring for Children – which are awarded by various competing bodies. In total, in 2001/02, there were 49,000 Level 3 NVQ enrolments plus 3800 at NVQ Level 4 in Health and Community Care (LSC ILR – see **appendix 1**). One of the largest awards is Edexcel's BTEC National Certificate and National Diploma in Care, which has approximately 36,000 enrolments each year. This has units linked to NVQs.

AVCEs in health and social care subjects are popular with young people (about 10,000 registrations in 2002/03). Around 4500 students gained AVCE (double award), while

1700 learners gained AVCE (single award) in 2002/03. Edexcel also has a range of Level 3 professional development qualifications (eg 1000 students registered in 2002 for a qualification in counselling). Its current group of HNCs and HNDs are being revised at present, with many becoming the first year of FD programmes.

The health and social care MA framework attracts large numbers: 27,000 AMAs had been recruited in total (up to 2001), and there were around 2000 starts in 2002/03. By contrast with many other sectors, however, they include a high percentage (over 70%) of starters over the age of 18. This possibly reflects the fact that many older learners (ie aged 18–25) are recruited to AMAs as part of workforce development programmes and it is still not a generally recognised route for learners under the age of 18. Instead, such young people seem more likely to opt for a full-time college course (AVCEs, BTEC Nationals) or to go into jobs as healthcare assistants or care assistants (Level 2). AMAs in this sector are mainly female.

The average AMA programme in health and social care lasts less than 2 years, which is below the recommended minimum (see DfES 2001) and 40% of AMA leavers gain a full Level 3 qualification or complete framework (Fuller 2004). However, on a number of AMA programmes, standards are still being developed (since, like many other sectors, there is not a tradition of apprenticeships in many parts of this sector).

Finally, turning to Level 4, there are around 57,000 students in subjects allied to medicine at HEIs (HESA data for 2002/03; see **appendix 1**). These include around 25,000 on first degrees and 21,000 on DipHEs, the latter being principally nursing students. The remainder (9500) are studying for a range of other undergraduate qualifications in this subject group, including 500 HND/HNC students and 700 on new FDs. However, most of the health professional-orientated disciplines are offered primarily as degree courses.

In addition, there are likely to be people looking at careers in care who are taking courses in social studies and management, but these are not included in the figures above.

3.4.3. Summary

Thus, in health and social care we see:

- two very large sectors of employment, with health being still largely public sector and social care more a mix of public, private and voluntary sector organisations
- increasing government regulation to improve standards of service and the development of national standards, leading to increased demand for staff working at all levels to be qualified to do so
- growing demand for staff working at higher levels, with a blurring of roles between different occupational groupings; an increase in multi-professional teams and new occupations at intermediate levels emerging; growing skill levels needed for all grades of staff
- significant investment in workforce development, although historically, take-up of qualifications has been low (except for nursing and social work), a vast array of qualifications and a wide range of education and training providers
- large numbers of people now attracted to the MA framework, though it does not seem to be a recognised route for young school-leavers

- a mainly academic route for many professions allied to medicine (and the strong influence of professional bodies on qualifications).

3.5. Travel services

The travel industry in the UK was our fourth sector and showed further contrasts with the other sectors investigated. It is generally seen as part of the wider-ranging tourism and cultural industries, a major and growing employment sector (over 2m people) and direct contributor to the UK economy (some £75bn). It accounts for one in six of all new jobs created and its total workforce is now bigger than the combined aerospace and automotive industries (DfES 2002).

In contrast to our other sectors, the travel services sector is characterised by a relatively young workforce – 17% are below the age of 20, compared with 5% of the total national workforce.

The wider tourism and cultural industry faces a number of challenges in maintaining its competitive edge in delivering world class standards of excellence to meet rising customer expectations and choice. The sector has faced particular difficulties in recent times (including the foot-and-mouth disease crisis and the aftermath of the events of 11 September 2001), but it has an underlying competitive weakness due to a growing skills gap, with many employers facing difficulties recruiting and retaining skilled staff (DfES 2002). Moreover, productivity levels compare unfavourably with those in France, Germany and the US. Less than a fifth of managers and supervisors are appropriately qualified, compared with more than half in other sectors, and a quarter of front-line staff lack basic skills.

Our study focused on one part of the sector – travel services – which has around 105,000 employees. This is not particularly easy to separate out as a segment, as many reports relate to a slightly wider sector (travel, tourism and events). This has around 9000 employers, 80% of which are in the travel sub-sector (TTENTO 2001). Employment is concentrated in London, the South East and the North West, mainly in small and medium-sized enterprises (SMEs) – many independent travel agents have fewer than 10 employees, although well-known employers (eg TUI UK/Thompson Travel Group; My Travel/Airtours; Thomas Cook Group; and First Choice) make up about a fifth of the workforce. Although there has been an overall net employment growth in the industry, a significant proportion of vacancies represents replacements, rather than additional demand. Labour market 'churn' and 'leakage' to other sectors are seen as significant issues for employers who might need to make substantial efforts to retain existing staff.

The travel services sector experiences recruitment difficulties that arise from a negative image: low pay, lack of training and lack of clear career structure. The DfES report on skills dialogues (DfES 2002) reported that the sector relies heavily on a young workforce and that an emphasis on recruiting young people with unrealistic expectations of rising through the ranks may be adding to staff retention problems. It also concluded that it would be important to manage the expectations of young people better in the future, and suggested the need to improve the coordination of recruitment, retention, training and skills needs by using national occupational standards to give a basis for a more integrated approach to training.

The DfES (2002) reported that, as well as relying heavily on a young workforce, travel services and the wider travel, tourism and events sector rely heavily on women returners.

3.5.1. Demand at Level 3 and Level 4

The main roles within the travel sub-sector are managers, owner-managers, consultants and advisers. About a third of all employers do not require qualifications when recruiting at practitioner, supervisor or managerial levels. When recruiting at higher levels, vocational or professional qualifications, sector-specific skills and practical experience are preferred over academic qualifications (TTENTO 2001). The sector relies heavily on recruitment of young people directly from education – half of all new recruits (TTENTO 2001). Of these, just over half are recruited directly from school and the remainder from further and higher education.

Current skill needs in the travel sector are for:

- transferable skills (communication, personal presentation, flexibility, using initiative, customer-handling skills) and basic literacy and numeracy

- the ability to cover a wider range of tasks while developing specialist knowledge – the latter is especially important for smaller businesses as a way of keeping a competitive edge over other, often larger, operators; the idea of niche players is important for smaller independent businesses

- ICT skills, now becoming essential as the internet is used increasingly for researching and booking travel options for clients; ICT skills (in relation to internet, online and digital media bookings) may require a different set of skills (rather than a higher level)

- the ability for managers of SMEs to maximise the potential of new technology and to develop skills to increase productivity (eg skills in areas such as work scheduling and work process management).

Traditionally, there has been a strong dependence on short sector-specific (and product-specific) training and development, but this specific level of training provision is considered to be one of the most important reasons for the skills gaps currently faced by the travel (and tourism) sector. Costs, lack of time, lack of appropriate courses or coordinated training approaches and difficulties in finding cover are all cited as reasons for not providing training. Following the terrorist attacks in the US on 11 September 2001, at least one major travel operator cut its training and staff development budget significantly. During the course of this study, a private training provider (which reportedly had about a third of the private training provider market) ceased trading. In a recent survey of graduates and employers (Major and Evans 2003), very few companies offered graduate training schemes (and only a minority offered salary scales reflecting entry qualifications), although there is now some evidence of larger firms looking at the possibility of Graduate Apprenticeships (GAs). On-the-job training, including the apprenticeship route, is ‘the favoured mechanism for providing the best employees’ (Major and Evans 2003, 27). Employers feel that many of the more generic skills that are important for good job performance ‘can only be learned on the job’ (DfES 2002, 55).

3.5.2. Provision at Level 3 and Level 4

Although there were a large number of enrolments (some 18,000) at FE level in 1999/2000 in travel and tourism (the latest year for which sector information is available; see DfES 2002), one particular course dominated this total – the Welcome Host course, accounting for some 8600 enrolments. A further 700 were enrolled on NVQ Travel Services (or related courses), mainly at Level 2. The other strong industry-linked courses at FE level were ones based on specific products (eg Galileo and Amadeus – both

reservations packages) and courses specific to particular parts of the travel business (eg air fares and ticketing).

Both Edexcel and City & Guilds offer a range of vocationally related travel and tourism qualifications (at Levels 1–3). In addition to NVQs at Level 2 and Level 3, Edexcel also offers a Level 3 BTEC Diploma in Travel Operations and an AVCE (single and double award) in the area of travel and tourism. City & Guilds offers the Association of British Travel Agents (ABTA) Certificate in Travel (Level 2 and Level 3); it is estimated that about 6000 of these certificates are awarded annually.

Within the travel sector, the MA framework is now seen as the main entry route for young people, although young people do still progress via college-based programmes. Figures quoted by Fuller and Unwin (2003) show that some 10,200 AMAs were recruited in total (up to 2001); of these, almost two-thirds were aged 16 or 17 when they started (36% aged 16; 24% aged 17). Some 50% of the 7000 leavers (ie those without the full MA) achieved a full NVQ at Level 3 (Fuller and Unwin 2003). The advanced MA tends to be achieved within 2–2.5 years. However, the sector workforce development plan (TTENTO 2001) noted that the success of the MA route was gradually being eroded as increasing demands were imposed on the framework (eg the inclusion of key skills and the technical certificates). The most recent data on AMA starts in travel services in 2002/03 shows 1505 in total: 70% of these were under 19 years old and 90% were female (Fuller 2004). Unlike most other sectors, around a fifth of AMA starters do not have employed status.

A number of colleges offer the MA framework, but find it expensive to operate (particularly in terms of requirements for workplace assessments and observations). In addition, the prevalence of private training providers (who may have greater scope to negotiate national training agreements with some of the major players in the industry) means that colleges can face difficulties competing for MA business in their localities. After successful completion of the AMA, there seems little demand (or incentive?) for young people in the workforce to progress further. There are also a number of HE courses – the UCAS website (www.ucas.ac.uk) carries information about some 20 or more first degrees in travel and tourism (sometimes with specialisms – eg countryside management, events management, adventure tourism). Additionally, there are now some 15 or more FDs in the subject area and about 50 HNDs, reflecting the popularity of the area with young people and (their) perceptions of future demand in this sector. In 2002/03, there were over 7100 students enrolled on undergraduate courses in travel, tourism and transport in HEIs (with 6710 studying on a full-time basis). Such figures provide a measure of the potential supply of highly qualified people to the travel and tourism industry. However, as noted above, only about 30% of new recruits come from higher education, and some studies relating to recruitment in the travel services sector have quoted figures as low as 8% being recruited from higher education (eg Major and Evans 2003).

3.5.3. Summary

Thus, in travel services we see:

- the wider tourism and cultural industries, of which travel services are part, as a major growth area of employment
- a reliance on a young workforce
- an industry which has difficulty recruiting and retaining staff (linked to its young workforce, limited training investment and also its mainly SME structure), and one which is facing a growing skills gap at all levels

- little emphasis by employers on academic qualifications when recruiting staff

- the MA framework as a main entry route for young people, with relatively good completion rates, but apparently little progression by young people at work beyond the MA to higher levels of education

- a tradition of using highly specific short training courses to meet staff development needs, rather than longer education and training programmes.

3.6. Summary

This section has provided an overview of the different issues facing our chosen sectors, plus some contrasts in the demand for Level 3 and Level 4 qualifications and the use of work-based routes to higher levels. We now move on to discuss some of the barriers to Level 3 vocational and work-based progression, drawing on material gathered for this study, our interviews in these four sectors and other research studies.

4.Inhibitors to progression to higher-level knowledge and skills via work based routes

4.1. Introduction

As we saw in section 2, there are a large number of people who hold intermediate (ie Level 3) qualifications, with a substantial number qualifying each year at this level. But a relatively small proportion of those with vocational or work-based qualifications at this level progress to formal education and training at higher levels (though the available data on transitions from vocational Level 3 to Level 4, especially on people over 21, is limited). In particular, relatively few take a work-based or apprenticeship route into higher education. In contrast, the proportion of those achieving Level 3 academic qualifications who progress to higher education is very high (mostly young people, using the traditional route to higher education).

Furthermore, although there is an increasing number of (mainly older) people entering higher education each year with qualifications other than traditional A-levels (some with a mix of vocational and academic qualifications and relevant work experience), such vocational entrants are concentrated in certain programmes (part-time HNCs, foundation degrees (FDs), professional courses) and certain subjects. It is a government policy aim to broaden further the intake to higher education – the target for HE participation by young people in England aged 18–30 is 50% by 2010 – by encouraging the development of more FDs (which are vocationally orientated programmes) and placing more emphasis on work-based learners in local Access and Aimhigher programmes.

However, there are clearly major difficulties to be addressed in increasing the significance of the work-based route. Many reasons have been put forward to explain why there is not more participation in higher education via work-based routes – lack of encouragement and support from employers; lack of careers advice and guidance; inadequate preparation of vocational and work-based learners for HE study; lack of suitable entry mechanisms to higher education – as discussed in workshops at a DfES seminar on WBL routes to higher education (DfES 2004a).

In section 3, we saw that sectors have different patterns of demand for intermediate and higher-level skills, which are driven by different factors (eg economic, technological, quality of service, legislative). Employers in different sectors want differing kinds of provision at Level 3 and Level 4, and there are different qualifications systems in place, as well as different patterns of recruitment and internal career progression. As a consequence, some areas of vocational education at Level 3 and Level 4 are better developed than others. In some employment sectors, MA frameworks are more numerous, more people achieve Level 3, and more are eligible for and want to enter higher education than in others. In a study of apprenticeships in Northumberland in 2002, for example, over half of the skilled engineering and construction occupations required an NVQ Level 3, compared to a third of people working in sales occupations (Bates 2002). Also, as we have illustrated in section 3, there are different sectoral traditions regarding the acceptance of training and further progression of employees and direct engagement with colleges and universities.

Sectors and occupational areas therefore have specific issues as regards VET, and one would expect therefore a range of factors to influence the likelihood of individuals in different sectors of employment to progress successfully to higher education from the workplace or via vocational qualifications. In this and the next section, we review these issues, focusing in this section on the limitations or inhibitors to progression, and in the next on enablers – what has been found to work, or could be done, to encourage or

improve progression. We draw both on the research evidence from other studies (published up to July 2004) and our own sectoral interviews.

The key issues affecting work-based progression are listed below under several main themes:

- further learning is not supported or valued by employers
- the low calibre of students opting for vocational routes
- lack of awareness of work-based routes to higher education
- uneven quality at Level 3 achievement
- inadequate preparation for higher education
- entry mechanisms
- financial constraints.

Many issues are linked and come up in several themes discussed in this section.

4.2. Lack of employer support or encouragement to progress

For some time now, there has been a general perception by employers (and also by young people and their advisers – see **section 4.4.1** below) that apprenticeships and other Level 3 vocational qualifications are training awards associated with the workplace and an end point, rather than a route to further study and to higher education in particular. Foundation degrees (FDs) may have started to address this perception and promote lifelong learning, but there is a long way to go. A study of employers' views on vocational higher education, undertaken in 2003, found that employers were confused about the intended purpose and role of FDs (Little *et al*. 2003).

The current evidence suggests that only a few young people complete apprenticeships and go on to further study (by entering HEIs or FE colleges). It may be that some do not want to, preferring the option of full-time work in a well-paid, skilled job; while others are not given any encouragement or are deterred by their employers from doing so. This may be due to a belief that successful learners will move to another employer or that they will be poached by employers unwilling to invest time and expense in training their own workforce (PIU 2001). This is seen as a particular concern for small companies (see eg Hodgson and Spours 2000).

The huge shift towards graduate-entry professions (eg law, nursing, accountancy), expansion in higher education and graduate-entry schemes has meant an erosion in traditional work-based routes for young people – the tradition of GCSE or A-level entrants joining firms and undertaking on-the-job training has all but disappeared in many places (though not, for example, in travel services: see **section 3.5**). There has been a reduction in high-status jobs that are accessible via a Level 3 qualification, and with graduate growth outstripping demand in traditional graduate jobs, more graduates take up jobs previously seen as the preserve of Level 3 qualifiers (see eg Rogers and Waters 2001). This adds to doubts as to the strength of demand for Level 3 skills and qualifications. It has also been suggested that the lack of labour market regulation tends to weaken employer demand for Level 3 qualifications (Keep 2004).

4.2.1. Employer support

In each of our sectors, questions about employer support for further education and training were evident. In each, we saw a clear demand for higher-level knowledge and skills (as noted in **section 3**). However, the extent to which employers are willing and able to support existing employees to develop such knowledge and skills through formal work-based training and/or VET is limited, primarily due to funding issues. In engineering –

where there is a stronger tradition of formal training and encouraging promotion of those with Level 3 qualifications who have demonstrated ability and talent; and where gaining a higher qualification is seen as a worthwhile option (Shirley and Weiss 2001) – we found that cuts in training budgets (in large and small companies) had led to less generous support for employees (in terms of payment for course fees, access to loans, giving time off for study, etc), although some companies were still very encouraging. Small horticultural businesses spoke of 'not being able to afford to lose people for one or two days a week' (eg to pursue an HNC). If such firms recruited someone who was already studying, then they would tend to employ that person on a part-time basis to ensure they were 'not a drain on company resources'. A further issue for horticultural businesses (particularly local nurseries and market gardeners) was the uneasy fit between college-based education and training and the seasonality of their businesses. In the travel industry (still suffering from the downturn in air travel), some of the major players had drastically reduced their training budgets. The industry is also very target-driven and works to very slim profit margins. Hence there is limited capacity to allow employees time away from the core business for education and training purposes, other than for short (1-day or 2-day) industry-specific training courses.

4.2.2. Funded support

By contrast, in health and social care, problems of skill shortages and the commitment to improve quality in the sector have led to an increased number of funded initiatives to develop more work-based career progression at all levels. These include skills audits by employers and moving from informal to more formal planning of skills needs. However, in health, there are fewer work-based progression opportunities for those in professional groups other than nursing (where the main shortage problems lie). In social care, the main focus of funding (linked to legislation) is on improving basic skills and on upskilling at Level 1 and Level 2, but there is less demand at Level 3 and less funding for progression from Level 3 to Level 4. Yet even in these sub-sectors, there are still tensions, particularly for smaller employers, between the education and training need to develop skills required for 'the job in hand' and the perceived benefits for organisations of a wider and more broadly educated workforce.

4.2.3. Encouraging SME participation

Linked to the question of funding for specific training and qualifications is the question of more general encouragement given to employees to develop their knowledge and skills. It is well known that in small businesses, managing skills development and training poses a number of problems. Often owners-managers of micro-businesses question the value of developing managerial skills in employees. If an employee has already reached supervisory (or team leader) level, there may be no real business need for that individual to progress further, as seen in the examples below.

- In horticulture, progression may mean moving into more niche or specialised areas of work.

- In the travel industry, many employers are prepared to support staff to achieve Level 3 qualifications (often via AMAs), which they value as a way of meeting their retailing and customer services skills needs, but many take the view that there is little need to develop staff beyond that level. This reluctance may be linked to the high demand for good retailing and customer service skills (within the industry and in other sectors) – employers may feel that they will lose highly skilled employees to other employers (in the same or other industries) who may offer slightly better pay and conditions.

- In engineering, the strong demand for good apprentices and craftsmen/women in specific areas may mean that there is less reason for individuals there to seek to progress to higher levels.

However, in health and social care, taking a higher-level qualification is viewed positively by employers: it is seen as increasing an individual's motivation, as providing a sense of security and as a way to assist staff retention. Employees in these sectors also value opportunities to become a graduate as a way of advancing their careers.

4.2.4. Progression arrangements

Employers must also consider whether, and how much, to engage with local colleges or universities for the development of their staff at higher levels. Most large firms have developed relationships with local institutions, but fewer small firms do so (and usually their contact is with local colleges rather than universities), while most university staff lack experience of working directly with employers.

In a local study on vocational higher education in the Humber Region, the employers interviewed were broadly satisfied with training provided up to Level 3, but less so at Level 4 (HESTER 2004). The (familiar) criticisms of HE courses being out of touch and not practical enough were evident, and there was also a perception that they lacked flexibility to accommodate shift patterns. According to the Humber study, it can be difficult to convey the message that many public college programmes can be taken on a modular basis or by distance learning, and that the course content can be made relevant to employers' specific needs (as seen in recent FD developments in particular). Such perceived barriers can add to employers' reluctance to encourage their employees to take the step up to Level 4 education and training.

The LSC's Pathfinder project, which is fostering the development of models of AMA–HE partnerships, found that most existing partnerships were HE-focused. As a result, the LSC has begun to develop more employer-led partnerships, which are focusing on skills and knowledge that specific large employers want their AMA achievers to develop (LSC 2004c). However, securing such employer commitment has been time-consuming and difficult to achieve in many of the sectors and there has been much less success with smaller employers. The Pathfinder project has also found a lack of awareness and often serious misconceptions about what FD courses can offer to an employer's AMAs or other Level 3 workers, and how they can be delivered to the benefit of employees and employer. For example, one HEI had designed an FD that did not involve any work-based assignments in the first year – how is that intended to benefit an employer and get their support?

4.3. Calibre of vocational students

A detailed analysis of young people's experiences of post-16 education and training (Payne 2003)[4] found a strong link between taking vocational qualifications after the age of 16 and performance in GCSEs. Most 16–17 year olds with GCSE results in the top third nationally were taking A-levels, whereas only one in 10 was studying for vocational qualifications. The percentage taking vocational qualifications increased as GCSE results became poorer. Thus nearly half of 16–17 year olds with middle third GCSE results were taking vocational qualifications, usually below Level 3. Nearly half of 16–17 year olds with bottom third GCSE results were not working for any qualifications at all – and those who were tended to be taking lower-level vocational qualifications. Payne (2003, 2) also

[4] The Youth Cohort Study (YCS) relates to 16–17 year olds in spring 2002; it postdates Curriculum 2000 reforms, but predates the introduction of many of the new GCSEs in vocational subjects.

notes that between 2000 and 2002, there was 'a marked fall in the proportion taking vocational qualifications, partly due to the Curriculum 2000 reforms'. It seems therefore that vocational qualifications are not the preferred choice of most young people continuing in education and training beyond compulsory secondary education. Moreover, those who do opt for the vocational route tend to be students with poorer GCSE results, who then progress to vocational qualifications below Level 3. (See also evidence in **section 2.2.1** on how the A-level route to higher education is 'fixed' at an early age.) One reason why employers may be unwilling to support, or have concerns about supporting, further progression beyond Level 3 is the poor calibre of many students who opt to study for a vocational qualification after completing compulsory secondary education.

4.4. Awareness of the vocational route

4.4.1. Guidance

As highlighted above (in **section 4.2**), there is a perception that the AMA and other Level 3 vocational qualifications are awards associated with the workplace rather than a route to further study (see also Aston 2003), and there is some confusion among employers about work-based pathways to higher education and the new FDs. Also, the lack of an understandable work-based route to Level 4 occupations is cited as a barrier to progression. Some employer organisations have recently called for a comprehensive suite of programmes of combined vocational education and training for all occupations at Levels 1, 2, 3 and 4 (Sidnick 2004).

There is also some confusion among young people. Numerous government reports have pointed to the poor quality or lack of information regarding WBL within the careers guidance system (DfES 2001; Ofsted 2002a, 2002b; ALI/Ofsted 2003). These various reports note that the information available may be biased, inaccurate or out-of-date, with pressure exerted on pupils by parents and schools to take the 'better' non-vocational routes. Ongoing research by LSDA corroborates this (LSDA 2004b). Most recently, a study of the role of schools in shaping the perceptions of young people and their choice of post-16 pathways found that schools, particularly those with sixth forms, actively promote progression to academic routes over other forms of post-16 progression (Foskett, Dyke and Maringe 2004). Moreover, awareness of work-based routes is generally low.

A report on MAs and National Traineeships argued that lack of formal guidance towards the end of apprenticeships (or on completion) limits the choices young people can make, including the option of further qualifications (Kodz *et al.* 2000). An earlier study (Sanderson 1999) found that the percentage of MAs who would consider further study rose when they were told of the options available and of the possibility of part-time study. Even within the engineering sector (which has long had a tradition of apprenticeships), one study found that students and trainees felt they had been given insufficient information about possible career paths and about wider opportunities once their training was completed (Shirley and Weiss 2001).

4.4.2. Perceptions of the vocational route

The image of vocational work-based education and training that is given to young people can have an effect on those who choose to take this route after secondary education (and this image is often linked to the image of an industry). The following points highlight how the vocational route is perceived in the sectors studied for this report.

- *Engineering* has had a strong tradition of encouraging progression from entry at lower levels (apprenticeship) to technician qualifications and then on to higher levels via HNC/HNDs or degree study. Such a part-time, work-based route to jobs as a

professional engineer is still distinguishable, alongside the full-time route (of BTEC National Diplomas or A-levels at schools and colleges), but has become less commonplace. This is considered to be partly due to the greater promotion and expansion of the full-time academic route to university. Employers feel that there is a general perception in schools that the academic, rather than the vocational, route is the only (or best) route into the best engineering jobs. This perception is reinforced by the emphasis given by professional engineering bodies to A-level scores in SARTOR-3 regulations for gaining professional engineer status (though this is now under review). On the other hand, the college route (of BTEC National Diplomas or AVCEs) and apprenticeships are perceived as being for young people of lower ability. As a result, fewer of the more able candidates now consider apprenticeships. This is felt to have had a major impact on the quality of intake to apprenticeships (and a knock-on effect on completion rates and ability to progress).

- In the *travel service* sector, young students who opt for vocational qualifications (BTEC National Awards or the AVCE in Travel and Tourism) tend to be those with poorer levels of achievement at GCSE. Some college providers were anticipating that changes to the AVCE in Travel and Tourism in 2005 (giving a more standard A/AS structure) might encourage more able students in sixth forms and colleges to take this (alongside complementary subjects such as geography and modern foreign languages).

- In *agriculture and horticulture*, college providers speak of young people having drifted into FMAs with little positive drive and motivation to succeed at that level (and hence possibly progress to Level 3 via an AMA). This is not to say that all those starting FMAs and AMAs in agriculture and horticulture are poorly qualified, poorly motivated or poorly advised. As one college provider noted, 'some of our best AMAs are here in spite of the careers advice they got at school...!' But there is a perception among employers (in the horticulture sector especially) that taking up a job with work-based training at 16 is seen by the Connexions service (ie careers advisers) as something for low achievers.

- In the *health* sector (where significant resources are being invested in workforce development), there is still the requirement of a science A-level for entry to training for many health professions at HE level: this could be seen as limiting progression opportunities for those choosing vocational and work-based routes.

4.4.3. Personal barriers to progression to higher levels

The LSC's Pathfinder development project (and also some other local schemes for widening access) found that one of the biggest challenges to recruiting work-based students to HE courses was convincing them that they could achieve at higher levels, and changing attitudes towards higher education. This is especially relevant in sectors where there are no traditions of progression to higher education. There is a need to address the low self-perception of many adults who may have been unsuccessful learners in the past, who lack confidence and have a fear of failure, as well as addressing their general awareness of higher education and HEIs (see Howard 2004). Work-based learners often lack the kind of advice given in colleges to full-time students on vocational courses. There is also a need to involve private work-based providers more in raising awareness of progression opportunities. Some college providers also suggested that specific groups of work-based learners with low aspirations need to be given more attention – for example, young (mainly female) workers in the travel business who tend not to consider or seek further development opportunities (see also **section 3.5**).

4.5. Quality issues

Modern Apprenticeships (MAs) have been the subject of successive reviews since their introduction in 1994. The government-sponsored review culminating in the Cassells Report noted that 'successful experiences in apprenticeship encourage people to undertake further learning during their working lives. To this end it is important that an apprenticeship includes high-quality formal learning and that this can lead to higher levels of occupational and professional qualifications' (DfES 2001, 10). In fact, the explicit inclusion of a technical certificate within all MA frameworks was intended to strengthen the knowledge component of MAs and thus provide a stronger progression route to higher education. Criteria for the technical certificate include the delivery of underpinning knowledge equivalent to at least one NVQ through a taught programme of off-the-job learning and a structured approach to teaching and assessment.

SSCs are responsible for approving the technical certificate for the MA frameworks relevant to their occupational sectors. There are a large number of technical certificates – some 370 qualifications are recognised at the time of writing – according to a briefing document from Edexcel (Owen 2004), but they vary considerably between sectors. In some frameworks, current AMA achievers have not taken technical certificates (since some are only just starting to be delivered), so this raises issues for mapping achievement against HE expectations.

The low completion rates at Level 3 and the lower than expected take-up of places in many sectors (see Fuller and Unwin 2003) are a cause for some concern and represent a perceived barrier to establishing the AMA as a route to higher education. Research commissioned by the Scottish Executive (Enterprise, Transport and Lifelong Learning Department) in 2003, which aimed to inform the development of policy and practice for MAs in Scotland, investigated a range of issues, including factors associated with completion and non-completion (Gallacher *et al.* 2004). The study focused on young people (aged 16–24 at the time of registering for the MA) who were registered through a Local Enterprise Company (LEC) (ie they were publicly funded to undertake the MA). Key factors associated with completion included:

- a supportive workplace context in which employers took an interest in the training process and understood the MA programme
- the quality of the training support offered, whereby training officers established a good relationship with the apprentice and saw their own role as one of training, rather than being merely an assessor of SVQs
- a good fit between the content of the apprenticeship framework and the level and content of the young person's job role
- the capacity of the young person to undertake SVQ/NVQ training at Level 3.

The importance of the workplace environment in facilitating learning linked to formal work-based qualifications has also been reiterated in another recent study on improving learning through NVQs at Level 2 or Level 3 in the workplace, with a particular focus on apprentices in engineering, childcare, administration and hairdressing (Tolley *et al*. 2003). The study found that workplace settings which provided apprentices with opportunities to apply what they learned at college and to acquire learning which went beyond the immediate needs of the workplace led towards the development of independent capability and furthered apprentices' motivation and ability to go on learning. Such workplace settings were most prevalent in engineering. However, in the other areas

covered by the study, many learning opportunities that arose through work were neither recognised nor exploited.

LSDA research (2004c) on increasing flexibility in apprenticeships found that providers were generally looking for ways to develop a closer alignment between the qualification and the job requirements.

In our sector interviews, some colleges commented on the difficulties in managing apprenticeship programmes at the level of the individual student, given the limited extent to which each individual's workplace can provide sufficient exposure to an adequate range of work situations for the required competencies in the NVQ units. Moreover, the requirement to complete key skills units within the MA framework was cited as a major constraint on completion. Colleges maintain separate completion figures for NVQ completion and for completion of the whole MA framework.

4.6. Making transitions to higher education

Having successfully completed a work-based (or more vocationally orientated) qualification at Level 3, individuals may find it hard to make the transition to studying at higher levels. One study of Modern Apprentices' progression to undergraduate business education (Chadwick 1999) found that although MAs were of a comparable standard to other HE entrants, they were more likely to have development needs in certain areas, such as writing and presenting information at an undergraduate level. A more recent study of students entering a large social sciences undergraduate programme with academic and vocational qualifications found that those entering with vocational qualifications experienced more difficulty in achieving outcomes than those entering from an academic route. In particular, those with vocationally orientated entry qualifications had experienced assessment practices of a more practical nature, and often felt unclear about the assessment criteria required by the degree (Hatt and Baxter 2003). Another study of Advanced GNVQ students concluded that staff in further education and higher education have a role to play in reassuring students that appropriate study skills can be learned and that higher education offers a variety of study modes accommodating a range of personal circumstances (Rhodes *et al*. 2002).

Another more general study of participation and progression by non-traditional FE students found that a lack of familiarity with and confidence in engaging with the educational world, fear of conventional assessment systems, inadequate guidance and the dominance of traditional qualifications were all barriers to successful progression to (and within) higher education (Smith and Bocock 1999). Similarly, a recent study of students accessing higher education from a part-time work-related course in care (delivered in an FE college) highlighted many other off-putting factors during transition – including the perceived absence of an 'adult learning culture' in some universities, the non-approachability of lecturers, and teaching and learning strategies that were different to those with which they were familiar (Howard 2004).

Some of our interviews explored whether the skills and capabilities developed within vocational and work-based education and training are a suitable foundation for the development of higher-level skills and knowledge generally, or for the skills required within formal HE programmes more specifically. Some college providers in the travel area commented that the assessment methods used for some NVQ Level 3 units meant that candidates were able to demonstrate the required competence without necessarily having to demonstrate adequate breadth of knowledge and understanding. Such assessment strategies did not seem to require students to demonstrate skills in researching and analysing information or in reading texts to gain understanding. As a result, it is unclear whether NVQ Level 3 achievements provide a suitable base from

which to progress to higher education. In health and social care, employers are becoming more familiar with (and more accepting of) the NVQ route, but once again, issues were raised about the suitability of NVQs at Level 3 as a sound base for higher levels of work-focused education. It was also suggested that a gap exists as regards qualifications above Level 3 (which it was hoped the emerging FDs would help to meet). In automotive engineering, a large company was supporting employees from the shop floor (many of them older people with National Certificates in engineering taken some time ago) to take a newly developed part-time FD. These employees had experienced difficulties coping with the more academic framework (eg theoretical concepts, essay writing, style of language used), with which they were unfamiliar, but very few had dropped out.

4.7. Entry mechanisms

One important aspect of progression to formal taught programmes is the entry mechanism to higher education. University entry has traditionally been achieved through the A-level system although, as we have seen in **section 2**, other qualifications at Level 3 (and other levels) also serve as entry qualifications to some HE courses at some HEIs. However, in many cases, admissions tutors to academic programmes often lack detailed knowledge of these other qualifications. The recent independent review of HE admissions policies (Schwartz 2004) found that, while information on vocational qualifications was available, few admissions tutors (and particularly those in pre-1992 universities) felt confident in their knowledge of these qualifications. The review found a variation in direct admissions to first degrees on the basis of vocational qualifications. While some courses at most HEIs accepted students with vocational qualifications directly, other universities (particularly those that were research-led) required completion of a preparatory course prior to full entry. The review noted that a perceived and real state of flux surrounding vocational qualifications and their equivalencies added to admissions tutors' lack of confidence. Work is currently being undertaken by the LSC and UCAS to try to establish a Tariff for AMAs in terms of their utility for progression purposes (LSC 2003), which may be one way of improving the situation.

However, it is only recently, with the introduction of the UCAS Tariff system, that agreed equivalencies between different qualifications have been established (since the 2002 entry). The UCAS Tariff does not, however, contain at present all the many possible vocational qualifications that candidates may have. For example, BTEC National Awards have only recently been incorporated and will not apply until the 2005 entry, while AMA achievement is not currently included. Since there is considerable variation between AMAs, as they are designed for the skills needs of their individual sectors, it will not be an easy task to bring them into one system.

There is also a considerable amount of personal discretion given to admissions tutors in many departments in offering a place to non-traditionally qualified applicants, and it is unclear just how the UCAS Tariff is being used at present to assess applicants coming from work-based or vocational routes.

More generally, these aspects of equivalencies between qualifications have been recognised by the working group looking at the reform of educational provision for 14–19 year olds (the Tomlinson Review). The group's interim report (DfES 2004b) called the 14–19 curriculum and qualification framework confusing and lacking in transparency, arguing that this had not only led to learners lacking a clear route through the system, but to confusion among employers and HE staff about the relevance of various qualifications. The interim report contends that the proposed 14–19 reforms will 'provide a flexible ladder of progression which all can climb and where different routes are valued' (DfES 2004b, 3). However, at a more detailed level, it is not clear how the proposed Advanced Diploma would integrate into the apprenticeship framework, or indeed whether the

working group has taken sufficient recognition of apprenticeships as a key vocational route for progression into higher education, and not only to employment.

There are also some concerns that the working group has not considered sufficiently the full diversity of provision of higher education, especially the role of FE colleges, the importance of vocational routes in post-1992 universities, issues relating to fair access, and the role of part-time study – that is, earning and learning at the same time (see LSDA 2004a in response to DfES 2004b). It is also important to recognise that mature students (21+) are now a majority on many HE courses, that they are more likely to study part-time and, as shown earlier, usually enter with non-traditional and vocational qualifications (see **table 2.5**). The Tomlinson working group is not looking at provision post-19.

Another aspect to consider is the main student marketing activity of many universities, which does not give much emphasis to work-based prospective students. Instead, much of the marketing to such prospective students is left to the universities' Access units, local partnership schemes or part-time student offices; as a result, it can be difficult for work-based students to access information to assess choices available to them if they are not in targeted groups or in partnership colleges.

4.8. Financial constraints

As well as issues connected with funding by employers of employees' training and development (see **section 4.2** above), there is the specific issue of government funding of apprenticeships. Until recently, funding for work-based programmes within SSC-endorsed MA frameworks was age-related (with funding ceasing altogether for those aged 25 or over). With the publication of its Skills Strategy White Paper (DfES 2003a), the government signalled its intention to remove the age cap. Furthermore, the apprenticeship framework and available funding covers education and training only up to Level 3. Some companies – for example, in engineering – would like their apprentices to progress to higher levels of vocational education (eg HNCs, FDs) during the final year of their AMA, but as these higher levels are categorised as Level 4, funding is not available within the apprenticeship framework. In addition, colleges find that some AMAs are expensive to operate, particularly given the requirements to undertake a set number of workplace observations and assessments (where costs can become prohibitive, especially if students are widely dispersed). Hence it is vital for them to be able to draw down the maximum funding available. Perhaps more serious still, some industry representatives suggest that the current funding arrangements for NVQs (which form a part of any MA), whereby an element of funding is payable only on completion of the relevant NVQ, may have led to some diminution of standards as colleges seek to ensure that students successfully complete their programmes. Small employers (in both horticulture and health & social care) also commented on the onerous demands placed on employers by the NVQ regime within the MA framework (particularly in terms of costs to their business of paperwork and assessment overload).

Where an employer is not prepared to meet the costs (of fees, books, etc) or to give them time off to study, there are considerable cost issues for the individuals participating in higher education. At present, despite the proposals from government for measures to support poorer HE students, those in relatively low-paid jobs and/or with financial commitments elsewhere are still likely to be concerned about the affordability of studying for a degree, and in particular, about the impact of the new variable fees. The expected costs situation for part-time students is less clear than that for first-time Level 4 students studying full-time, on whom the recent student fee debate has centred. As highlighted in a recent review of 14–30 education and skills policy (Brown, Corney and Stanton 2004), state funding for late developers (over 19 years old) who wish to take a Level 3 and have ambitions to pursue a Level 4 qualification is lower than that available to their peers who

took Level 3 at a younger age (see also Corney 2004 for further discussion on anomalies in state support for vocational Level 3 participants).

4.9. Other barriers

Some other specific issues and potential barriers to progression to emerge from our sectoral discussions were as follows.

- *The suitability of MA frameworks for older employees*: this is particularly an issue for horticulture, which seems to be attracting a number of older career changers. As we shall see in **section 5**, some larger employers operating in this industry have chosen to devise their own apprenticeship schemes, which are more suited to the needs of these career changers. However, given that such schemes do not necessarily meet the sector-endorsed MA frameworks, the regular funding streams are not available to support them.

- *Succession planning and the 'haemorrhaging of experience'.* This issue is also apparent in horticulture (where, for example, it can take a minimum of 7 years' hands-on experience to become a head gardener). Although sections of the industry are starting to prove attractive to older career changers, there has been a haemorrhaging of experience built up over several years from large public and private enterprises, as work has been contracted out to smaller independent employers. This is particularly the case for gardeners in local authorities where previously there was a well-established progression route from hands-on craft-based experience through supervisory posts to management positions The introduction of compulsory competitive tendering and contracting out of services to direct services organisations (DSOs) has meant that the previous well-understood career structure for gardeners within local authorities was no longer available. Because the DSOs are focused on breaking even, they tend to cut back on training and development, making it difficult to sustain the apprenticeship route (even where the continuation of apprenticeship opportunities may have been written into the contract).

- *Occupational standards and clearly articulated pathways.* In some of the employment sectors chosen for our study, occupational standards at higher levels (Level 4) have not been clearly delineated and/or are currently under review. For example, there are few travel-specific occupational standards at Level 4; most units at Level 4 are primarily aligned to aspects of management. As such, there may not be clearly understood progression routes to higher-level jobs within the travel services sector. In both travel and agriculture & horticulture, the relevant SSCs are currently undertaking reviews that should result in clearer specifications of higher-level industry-specific knowledge and skills (in addition to more general management standards). Added to the issue of higher-level occupational standards is the confusing array of awarding bodies and qualifications in some of our sectors (particularly health & social care and agriculture & horticulture). As noted in **section 3.2**, Lantra (the SSC covering agriculture and horticulture) is to work on producing a more coherent demand-led system of training.

4.10. Summary of main points

This section has identified a number of issues inhibiting the progression of vocational and work-based learners from Level 3 to Level 4, and especially to higher education. Some issues are more important in some sectors than others. The main themes highlighted are:

- *the lack of employer demand* for further learning in some sectors/occupations and a lack of encouragement from employers for apprentices and others to seek higher qualifications

- *the lack of awareness and understanding among employers* (and also learners and advisers) of work-based routes to higher education (and of higher education generally). Such poor understanding may be linked to employers' perceptions of HE provision as inflexible and unable to fit their needs

- *the absence of clearly articulated pathways* to higher-level occupations in some sectors, which may be linked to the question of better definitions of occupational standards at higher levels

- *the poor information and guidance* provided to employers and young people in schools on work-based routes and apprenticeships, and the lower calibre of students opting for the vocational route post-16, which in turn, raises concerns about the quality of output from AMAs and their completion rates

- *the inadequate preparation of some work-based students*, particularly with regard to their transition to HE-level study; such a lack of preparation might not be linked solely to aspects of AMA frameworks and assessment strategies, but could also reflect how much support they receive from their workplace environment

- *the financial constraints faced by employers* when funding training and development generally; and more specifically, the constraints placed on government-funded MA frameworks

- *the lack of understanding and knowledge among university admissions tutors* about AMAs and vocational qualifications more generally – this is a matter of changing hearts and minds!

Having considered the *inhibitors* to work-based progression, in the next section, we look at some of the *enablers* to progression that we have found during the course of this study.

5. Enablers of work-based progression to higher levels

5.1. Introduction

In section 4, we reviewed the main constraints on progression to higher levels of knowledge and skills, and especially to higher education, via vocational and work-based routes. We also gave details of some inhibitors to progression from the perspective of our four chosen sectors of employment: agriculture and horticulture; automotive engineering; health and social care; travel services. Even though these employment sectors might seem quite disparate, we have seen that many of the inhibitors pertain to more than one of our chosen sectors and also are likely to be seen in others.

In this section, we consider the factors that seem to enable employees in the workplace to move on from lower and intermediate levels of knowledge and skills to higher ones. Initially, we had hoped to be able to draw the key contributing factors from experience of successful progression, but we had difficulty in identifying much information on the evaluation of outcomes of new work-based programmes (some had only just started recruiting students) or innovative employer-based schemes. Many examples have very small numbers of apprenticeships due to the size of the business, with a low throughput from individual firms. As a result, some of the material presented focuses on views of employers and providers on what works in different circumstances, or ideas under development, rather than on evaluated successful outcomes.

Although we begin with certain aspects relating to formal education and training programmes, we also provide examples of employers' own in-house activities. Not all were directly focused on transition from Level 3 to Level 4, but they do seem to demonstrate positive learning opportunities and to reflect a company ethos that encourages employees to develop within the workplace and so progress beyond Level 3.

5.2. Employers' schemes

First, there are employer-designed apprenticeship schemes. We noted earlier a number of restrictions on publicly funded MA frameworks (both in terms of the age of apprentices and constituent elements of the apprenticeship). These pose some difficulties for employers, since such frameworks do not necessarily meet the needs of their business or of their employees. However, if employers are able to draw on other sources of funding, they are not so constrained in what they can offer within an apprenticeship scheme – the essence of which is working and learning alongside more experienced people who can pass on their knowledge and offer positive role models. Although such schemes will tend to include some elements of a standard MA, there will be other additional elements to reflect specific business needs. The following examples indicate how apprenticeships can be very varied to meet business and employee needs, even within a single industry (such as horticulture).

The first example relates to a family-run horticultural business that has a strong track record of developing its staff and using internal promotions to fill vacancies. Recent experience of appointing people from outside to middle-management posts has not been overly positive, since such externally appointed people tend not to stay long with the company. The example shows how the business has modified the MA framework to suit its own needs and those of its employees more adequately, such that employees actually complete the apprenticeship (though the company cannot necessarily draw down public funding for this). Employees emerge capable of undertaking supervisory roles within the business, which puts them in a strong position to apply for internal promotion to management-level positions.

Horticultural apprenticeship for young people

The background

A medium-sized horticultural business (which runs its own nursery production operations alongside its retail garden centres) operates a 3-year nursery production apprenticeship scheme for young people aged 16–17. The company made a conscious decision not to link its scheme to NVQs and key skills for three reasons:

- the calibre of young person attracted to the business
- the difficulties of managing young people's time away from the business (attendance at college on different days for NVQ and key skills)
- the demands made on the employer by NVQ paperwork and assessment overload.

The scheme

Apprentices are employed on a year-on-year contract basis and have to pass each year to have their contract renewed. In year 1, apprentices are moved around different company sites to acquire specific craft skills (eg pruning, staking, spraying) and gain understanding of plant identification, plus other skills. In year 2, apprentices gain experience of different functions of nursery production (eg propagation, lifting, despatch) and undertake a 4-week block training course at a residential college, linked to the National Certificate in Horticulture. The company tries to ensure that apprentices' activities within the nurseries are linked to relevant aspects of the National Curriculum (NC) syllabus, and work-based assignments linking theory with practice are sent to the college for assessment. In year 3, supervisory experience and training is built in, using trainers brought into the company to deliver aspects of supervision and management training (eg supervision of seasonal staff; basics of financial and strategic management) – the NC syllabus does not cover this.

The next example shows how an MA framework has been adapted to meet the specific needs of older people (many of whom may already be highly qualified in a different subject) coming into this new area of work, as well as those of younger people. Although there is no guarantee of a job with the organisation after successful completion, many completers have subsequently gained senior posts (eg head gardener; assistant head gardener) within the organisation. Others have left the organisation and then returned at a later stage, having since gained higher-level qualifications (eg HNDs).

The National Trust 3-year training scheme for gardeners (and countryside wardens)

The background

Until 2001/02, the National Trust (NT) operated a standard apprenticeship scheme, but found that, as their potential recruits were increasingly older people (ie over 25) seeking a career change, the standard MA was no longer suitable.

The scheme

The NT now operates a 3-year practical training scheme – the NT Careership – on which trainees acquire practical skills in an NT property and gain underpinning theory and knowledge through college-based education, leading to a City & Guilds NVQ Level 3 in Amenity Horticulture. Trainees are recruited annually to a local NT property and given a 3-year contract, with salaries paid using the NT's own funds (generated through voluntary donations and legacies) and drawing on the National Garden Scheme. The careership includes several elements of a standard AMA, but not key skills – which were seen as inappropriate for most trainees. Trainees' NVQ units are matched to the seasonality of the specific NT property's garden (and linked to the head gardener's annual plan for that garden). In year 1, supervisors at the NT properties act as assessors for NVQ units, but in years 2 and 3, college-based assessors undertake the NVQ assessment. Given that trainees are not guaranteed a job with the NT at the end of the careership, the scheme also includes aspects of job seeking and career management.

The third example within horticulture shows how an organisation is planning to broaden its apprenticeship scheme to meet its own business needs more effectively, as well as extending the scheme to cover education and training at higher levels.

The Royal Parks apprenticeship scheme

The background

The Royal Parks (RP) has run an apprenticeship scheme for the past 40 years and used to have its own training school at Eltham Palace (in south-east London). In recent years (and with the contracting out of grounds maintenance work), the RP apprenticeship scheme has been linked to that of the National Trust. However, with changes to the NT scheme (noted above), the Royal Parks are taking the opportunity to relaunch their own scheme.

The scheme

Part of the relaunch involves creating an out station of a local college at one of the royal parks (Regent's Park), which will have its own classroom facilities, along with practice grounds and gardens, and hence provide a training base for RP apprentices. RP is planning to enhance its apprenticeship scheme by reinforcing the NVQ Level 2 and NVQ Level 3 elements with an additional theme –managing heritage parks, which could include knowledge and skills relating to metalwork; garden history; landscaping, etc. In the longer term, RP is looking at the possibility of extending the scheme both downwards to cover 14–16 year olds gaining work experience one day a week on a Young Apprenticeship (YA) and upwards to a fourth year, which could include supervisory and managerial aspects (possibly aligned to NVQ Level 4 Management units).

5.3. Foundation degrees

Foundation degrees (FDs) were launched by the government in 2000 as the main work-focused HE qualification, with the express purpose of significantly improving the delivery of technical skills to industry, business and services (as well as providing opportunities to progress to honours degrees). By design, these new programmes were intended to attract both young people seeking a work-related HE programme and older people, already in the workplace, seeking to enhance and develop their technical and professional skills. We might anticipate that FDs would be a key enabler to work-based progression, offering new opportunities or filling a qualification gap, although it has to be acknowledged that they are still a rather recent addition to the post-compulsory education and training landscape. As such, in some occupational areas, they are having to compete with other long-established and well-accepted vocational HE provision – namely, HNCs and HNDs.

Perhaps not surprisingly, in the sectors chosen for this study, we found a varied picture in relation to FDs. In engineering manufacturing, there are a number of FDs being developed (including some focused on automotive engineering), which are intended to meet a need not previously addressed. But it is not easy to get an up-to-date picture of the level of student intakes coming via different routes (MAs, BTEC Nationals, A-level/AVCE or other routes) as no agency collects this kind of information centrally. Moreover, as we have shown in **section 2**, from the national data on 2002/03 students, the range and pattern of entry qualifications held by FD students vary by subject and by mode of study (and also by student age). Within the engineering manufacturing sector, SEMTA (the relevant SSC) has a commitment to developing FDs as part of the Sector Skills Development Agency (SSDA) Framework initiative and the LSC Pathfinder project (see **section 4.4**).

But while there are some successful partnerships being developed within the sector, there is still no sign of a strong overall demand from employers or students. Some new courses have experienced lower demand than initially expected and have taken longer than anticipated to get off the ground. One difficulty has been encouraging employers to accept the concept of FDs when many have been relatively content with existing HNC/HND provision. A further difficulty relates to financial incentives to support FD students on work placements, since such placements incur costs for the employer in terms of supervision, mentoring, coaching and assessment. As companies increasingly look to run lean operations, such costs cannot easily be absorbed for their own workforce, let alone for students outside the company coming in on work placements. However, there are some successes, though not yet many with student output. The example below shows how the FD is helping to provide a new progression pathway in a large automotive business, one that meets the needs of the organisation and its employees more effectively than previous local provision. Success seems reliant on a number of factors: high employer and student commitment; delivery in a part-time mode and designed with employer involvement; clarity of purpose and understanding of the benefits to be gained by both parties, both during the programme (in terms of the WBL and improved job satisfaction) and in the eventual outcomes. As yet, the programme has not been subject to comprehensive evaluation.

Foundation degrees within automotive engineering

The background

The BMW Group is supportive of the concept of the FD and has a tradition of encouraging its employees to develop themselves to their full potential. BMW sees the FD as more work-orientated than an HNC and therefore as a more suitable qualification for the company. In particular, it ensures that work placements reflect the company's needs. A major requirement behind the BMW board of management's decision to invest in their new engine plant at Hams Hall in the Midlands was a fully trained and capable workforce. A new training programme was therefore designed and developed to upskill the entire workforce.

The scheme

Within this company-wide programme, BMW initiated a Mature Modern Apprenticeship (MMA) scheme and made a commitment to support a new FD for employees, which was developed in partnership with Coventry University and City College Coventry. BMW's production associates (qualified to National Certificate standard, again through a company scheme) may apply to embark on the FD programme. This gives them a new opportunity to gain a higher qualification. It is not necessary for employees who complete the MMA to progress to the FD, though some of the most able students may start it during the final year of their MMA. It is more likely that they will work for a period of time in their new role in order to gain more practical experience first. Employees are carefully selected for the FD on the basis of their academic background and personal attributes. BMW pays the course fees, but employees are expected to go to college and complete the required course-work in their own time. Employees view the FD as an opportunity to better themselves, to enjoy their job more, to enhance their future earning potential and to achieve greater recognition from an employer that demonstrates its willingness to invest in them. BMW expects a high level of staff retention from those who complete the MMA or FD, because they will have familiarised themselves with the company's culture and identified themselves closely with its ethos.

In another, but quite different, example in engineering, a new FD in Engineering Technology is being developed to help provide employed engineers with a new progression pathway to a BEng qualification, and hence to professional engineering status, through local and flexible modes of delivery. This has also required strong commitment both from employers, who have been involved as part of the planning team in its design, content, assessment, etc; and from the providers, who took advantage of existing college contacts to get the course up and running quickly. In order to succeed, however, it still seems to need some other ingredients, including accreditation from the professional institution (which is still to be obtained) once students have progressed through the programme; development of new teaching tools (eg an electronic blackboard system); and more support from within the university.

University of Bradford Foundation Degree in Engineering Technology

The background

This programme was designed by the School of Engineering, Design and Technology at the University of Bradford, and is now being delivered in partnership with four colleges in the Yorkshire/North East Region. In future, the plan is to extend the FD model to other areas of engineering and also to recruit students at Level 1 (eg 2nd-year apprentices), but it is recognised that this will take time.

The scheme

Designed with six strands in mind, only one (in manufacturing) has so far secured sufficient employer support to start running. It is a 3-year part-time course for employed engineers, aimed at enhancing their qualifications while in employment, and giving them a clearer route for progression in their engineering careers. The value to the first group of students taking part, who are all sponsored by their employers and are all HNC students (so they could join the FD programme at Level 3), is that it gives them an opportunity to study locally for a higher qualification (on day release and/or evening) and to continue working. Once they have completed the FD, they can transfer (as a 2nd-year or possibly 3rd-year student) onto a BEng course, which would also be delivered on a part-time, flexible study basis (via e-learning, open learning, university summer schools), but by the university rather than their local college. In particular, it is a way for the employees to attain professional engineering status, which would not be possible otherwise.

In health and social care, the National Health Service University (NHSU) has recently developed a framework for foundation degrees across the health and social services sector and is piloting a number of its own FDs.

There are a large number of FDs registered on the UCAS website, with more currently being developed. These mainly cover health studies, or health and social care studies, or social studies, rather than care. In many of them, the FD appears to be providing an opportunity for employers to obtain additional learning for staff, though we also heard that some of the early FDs had only superficially engaged with employers and had been put together from other existing programmes.

It is clear, however, that there is growing demand in this sector for qualified staff at intermediate and higher levels, as well as interest from employers in developing flexible learning to meet individual employee needs and in work-based career pathways, so the FD model is recognised in the sector as likely to have future growth. However, the sector is going through a number of changes at present, as outlined in **section 3.4**, and although there is quite a lot of interest in the FD concept from employers, some uncertainty remains. For instance, it is not yet clear where the FD is going to fit in the array of different qualifications and regulation that exists in this sector, nor how far it will provide a clear work-based route, either into distinct health profession areas (because of the hold by professional bodies on the academic route), or to care jobs at senior levels (where NVQ Level 4 has become established; for example, in care management).

Moreover, many Access to Higher Education courses already exist for mature students without traditional academic qualifications. For example, at one of the CoVEs we interviewed (in Bradford), there are two streams of part-time Access courses – a science route (eg for physiotherapists) and a health professional route (eg for nurses and

midwives). Neither requires any prior qualifications, and student demand is generally high, though students may have to overcome funding issues if they do not qualify for fee remission. There also seems to be some uncertainty as to how the new FDs will fit with the newly introduced social work degree, which has a significantly greater practice element than the Diploma in Social Work (DipSW) that it replaces. In particular, there is some concern about how much accreditation of work-related learning will be recognised for entry to the new social work degrees and how FD elements will be accepted as the minimum academic level (currently they are not approved by the General Social Care Council).

The question of recognition by the relevant professional body for professional registration is also an issue for FDs that are under development in other health-related areas, as the following example shows.

A new FD in Dental Technology has been facilitated by approval from the relevant professional body, the General Dental Council (GDC), but only after lengthy discussions to ensure that the curriculum and the work-based element met the council's requirements and those of the university.

Foundation Degree in Dental Technology

The scheme

The People's College, Nottingham has recently achieved accreditation for a new FD in Dental Technology, with a BSc top-up. The intention is that it be taken part-time, with delivery of work-based elements in the workplace, and it is part of a new route from Level 2 (five GCSEs) to degree. This FD will be validated by De Montfort University and offered in a consortium by five colleges. It replaces a vocational route – going from National Diploma to HND, then to degree – which was considered too lengthy. This new FD course has been set up with approval from the General Dental Council (GDC), but will not be recognised for professional registration until it is validated by a joint GDC and De Montfort University panel, once students are recruited.

By way of contrast, in the travel services area, college providers indicated that FDs would probably not be used by those already in the travel business to enhance their skills and knowledge – instead, they would be studied on a full-time basis by those seeking to enter the industry. As noted earlier (**sections 3.5** and **4.2.1**), this area of employment seems to have low levels of employer support for education and training not highly geared to specific industry activities. Moreover, the recently completed study of employers' use of graduates in the travel industry found that, while employers attach value to the placement year for undergraduates, only a minority would consider sponsoring students on HE programmes (Major and Evans 2003).

In agriculture and horticulture, the SSC (Lantra) is currently developing an FD framework for the sector. Currently, the more successful FDs seem to be those where students already have occupational/workplace experience (possibly gained through an AMA). Employers are more willing to sponsor an FD student who already has some relevant practical skills (since the student can then slot into the business and enhance these skills). In fact, Lantra's proposed framework includes 12-week work placements (although colleges would prefer 8-week placements), as the practical skills element is seen as an important aspect of the FD. Many large employers (eg English Heritage, the National Trust) commented that they could envisage FDs becoming a natural step in their

organisation's own career pathways, leading on from quasi-apprenticeship routes. As yet, however, the FD is unproven (and perhaps more crucially, these same organisations have only recently implemented, or are currently implementing, more structured career pathways following major internal reviews). Notwithstanding this positive note, the following example indicates the difficulties of putting into practice new work-related educational developments, even with the support of industry.

The Horticultural Academy

The background

The Horticultural Academy was set up by a consortium of some 15 large (100+ employees) nursery stock growers across the UK in an attempt to bring young people into the industry as potential managers. The initiative was in response to the industry's need for succession planning. Pershore College (which has CoVE status for horticulture) was invited by the academy to develop an FD in Horticulture Production. The FD was intended to fill the gap left by the demise of the sandwich HNDs that had previously provided the knowledge and practical skills required by the industry.

The scheme

The FD was to be delivered by a combination of ICT-supported distance learning and face-to-face taught courses involving residential attendance at the college on a block release basis. The taught programme was to be integrated with practical projects undertaken in the employers' own nurseries. Employers committed themselves to employing the young people (offering an annual salary of £10,000 for 3 years); paying for their tuition fees, accommodation costs (when on block release at the college) and other costs; and providing a suitable mentor at their work establishment. The scheme attracted interest from mainland Europe where there are similar problems of recruiting bright young people into the industry as potential future managers.

From the outset, the programme had difficulties in recruiting students. A number of reasons have been put forward for this.

- Although the Horticultural Academy produced recruitment literature, business pressures meant that local employers did not really get out into the local labour market and sell the idea.

- Employers were specifically looking to attract young people as potential new managers, whereas the scheme itself attracted quite a lot of interest from more mature students. Many of these more mature students already had a National Diploma in Horticulture, but perhaps more significantly (for the scheme), were potentially less mobile than younger people and often were not located near local nurseries involved in the scheme, so residential attendance at the college would prove difficult.

- The method of delivery – primarily via distance learning packages (and the college was not necessarily able to draw down sufficient funds for the development of these) – might not have appealed to many potential students. Easy access to computers at the employees' nurseries was not guaranteed, and some interviewees suggested that people already in the industry with significant practical knowledge and skills may nevertheless lack confidence in their own abilities as learners.

Whatever the reasons, the programme started with low numbers and, once up and running, lost some of its students to better-paid jobs outside the industry. The Horticultural Academy has now been disbanded, though the college is looking to relaunch the FD on a different basis.

5.4. Identifying clear pathways

A number of SSCs and other bodies have made efforts to identify national occupational standards from basic levels through to Level 4, signposting employment routes to progression through these levels, and identifying possible educational and training pathways aligned to these levels. These are intended to make people working in the industry more aware of opportunities for progression. A number of sectoral bodies have used funds to map initiatives involving partnerships as a way of highlighting potential opportunities for supporting better transitions from AMA to higher education, and to raise awareness of the additional support that work-based students may need, especially on more academic (honours degree) programmes (highlighted in LSC 2004c). Mapping in this way against national standards is also expected to help AMAs to progress more quickly through to FDs and beyond, if their achievements are better understood by the HEIs. SEMTA (the SSC covering automotive engineering) has developed a framework covering FMAs, AMAs and GAs, which has the potential to provide the necessary bridges and ladders and to demonstrate the possibility of progression and transferability of skills and knowledge within the industry. The Regional Development Agency (RDA) for the West Midlands (where automotive engineering has traditionally been very strong) has established a hub called 'Skills for Auto', which aims to use the SEMTA framework to develop progression routes from basic engineering for young people through to GA and professional apprenticeships. Other sectors without national frameworks are promoting coherence in other ways; for example, by sharing expertise across geographical regions.

There are also locally based mapping initiatives, which have been undertaken by a number of LSCs. Last year, for example, Sussex LSC embarked on a detailed mapping exercise to help inform the development of new FDs. This aimed to cover all of the vocational HE and Level 4/5 offerings and activity in Sussex in the health and social care sector. By drilling down into the sector in this way, a wider range of courses and activities being offered by the HEIs and FE colleges was revealed (including those not leading to awards and courses not funded by HEFCE or the LSC). Another mapping initiative, undertaken in Milton Keynes, Oxfordshire and Buckinghamshire as part of an investigation of the early years sub-sector, found that very little was known about all the different kinds of provision in the area and demand for skills at different levels. It was evident that progression routes to Level 3 and further education were quite well known, but little existed beyond that point. The initiative helped to make a case for establishing a new FD based on localised provision with clear pathways for prospective students (Kirk 2004).

In another local example, a new pathway had been developed in Northumberland, enabling work-based progression from a college-based HNC to a university-based DipSW. From research with students on FE courses, it was recommended that a much clearer map of learning pathways be developed by the college, one which linked across the different types of provision in the area – work-based, work-related and academic – to meet the needs at Level 3 and above in the care sector. Better information for potential students (and employers) was needed about occupational areas as well as qualifications; how students could progress to higher education; and where they could break off at different stages, if necessary, and gain credit for achievement (and then rejoin later) (Howard 2004).

Linked to the issue of all-through pathways are developments at compulsory secondary school level. These include a loosening of the compulsory subjects at GCSE level, the introduction of work-linked GCSEs, and the introduction of Young Apprenticeships (YAs) to encourage more young people to include more vocational subjects within their GCSE mix, rather than seeing vocational subjects as the preserve of lower-ability pupils. Although

such developments are in their early stages, there is some evidence of success, particularly in engineering (SSDA 2004).

5.5. The role of professional bodies

Staying with the theme of formal qualifications, we saw some developments relating to the professionalisation of various industries, which might encourage individuals working in the industry to seek to enhance their own capabilities. It was noted earlier (**section 4.2**) that in certain occupational areas, there have been moves to have an all-graduate-entry workforce. Professional bodies' requirements for professional registration may be inhibiting progression via work-based routes, particularly via the new FD. This seems to be the case in engineering (and possibly also in some allied health professions where A-level sciences are a requirement). As noted above (**section 5.3**), specific FD developments are often still awaiting formal approval by the relevant professional body for professional registration purposes. However, in other sectors, where there has not been a strong presence by the professional body, certain developments could be seen as encouraging progression linked to vocational and work-based qualifications, as the following example indicates.

ABTA professional register for the travel services industry

The background

The main professional body is the Association of British Travel Agents (ABTA). Although ABTA does not regulate entry to working in the industry as such, it does see itself as the main player in discussions about the adequacy of existing qualifications in the industry and debates about training and development needs.

The scheme

ABTA is currently working on an initiative to create a professional register for those working in the industry. ABTA believes that such a register might help instil within the industry a concept of continuous professional development (CPD). Three levels of membership are proposed:

- basic – equating to NVQ Level 2 (or equivalent) plus 2 years' work in the industry
- intermediate – equating to NVQ Level 3 plus 5 years' work in the industry
- advanced.

To retain membership, an individual would need to demonstrate, on an annual basis, engagement with certain education and training activities. ABTA is currently seeking the support of major players in the industry for the scheme. Part of those discussions involves encouraging large companies to map their own in-house training programmes against the national occupational standards so that equivalencies can be established (to allow completion of in-house training units to count towards achieving/maintaining membership on the ABTA register).

5.6. Recognition of non-linear progression

Progression, in a sense, implies linear movement from lower to higher levels. However, as noted in our discussion of entry to higher education (**section 2.4.2**), substantial numbers of students make sideways moves rather than the traditional expected upwards progression, and some even progress downwards. Within our chosen sectors, we have found several examples of employers looking to introduce schemes whereby highly qualified recruits (ie graduates) might be brought into the business on Graduate Apprenticeship (GA) schemes. Such recruits would be required to gain industry-relevant, technically specific NVQs at Level 2 or Level 3 to complement their more general higher-level capabilities. During the course of this study, we learned of proposals for such GA schemes in horticulture and travel. We also were told about plans for a new graduate scheme drawn up by the Automotive Academy to meet the sector's need for high-calibre engineering graduates in the automotive supply chain. This will help to meet a gap between academic study and work. On a 1-year programme, engineering graduates recruited will be given placement and training opportunities to gain skills and knowledge of working in manufacturing and to achieve NVQ Level 4 Engineering Management accreditation.

5.7. Company ethos

Company ethos and company orientation to the continuous development of its workforce are important issues. As noted earlier, in many of our chosen sectors there is a commitment to workforce development, but such development is not necessarily geared to externally provided education and training (which may lead to nationally recognised qualifications). For example, many of the larger employers with horticulture as part of their business had national and regional operations. However, whereas training and development linked to specific craft-type skills may be provided locally through local colleges (leading to specific NVQs or NPTC certificates to meet statutory requirements), supervisory and management development programmes (ie Level 3 or Level 4) tend to be delivered in-house from the head office (or main regional locations). Training and development beyond Level 3 was less likely to be standardised, as it needed to reflect specific needs of gardens linked to specific locations. In smaller horticultural businesses, which tend to have a culture of nurturing their own staff, supervisory and management training designed and delivered in-house was seen as giving employers the flexibility they needed to tailor such training to their changing needs. Given their budgetary constraints, employers need to be able to justify training and development expenditure by monitoring and evaluating activities and ensuring that results are fed back into future business plans.

Below we give two examples relating to horticulture. These show the approach to training and development that demonstrates a commitment to learning for all staff, adopts good theories of learning and has good links to business plans.

A small employer's existing scheme and planned developments

This employer offers non-management trainee staff opportunities to opt into studying particular units from the in-house management programme. On completion of such units, these employees are expected to complete a post-course work-based assignment linked to business operations, which has been agreed with their line manager. In this way, not only are staff able to put into practice what they learn on a unit (ie contextualising their learning), but it also enables the company to see tangible gains from the training. This same company is currently working with a local college to deliver a tailor-made programme linked to the theme of 'plants', to enhance employees' knowledge of a wide range of plants and increase their appreciation of mature plants *in situ*. The company is hoping that employees' own enthusiasm for plants will be increased and spill over to potential customers and increase sales.

The Eden Project, Cornwall

The background

A further example of an employer with a company-wide ethos towards employee development is the Eden Project in Cornwall. This is a large employer in the region with some 500 full-time-equivalent staff plus casual labour. On the horticultural side of the business, most staff have completed the RHS General Certificate and those who show an interest in progressing further are encouraged to study for the RHS Advanced Certificate.

The scheme

The Eden Project works in partnership with the Lost Gardens of Heligan (also in Cornwall) – the latter has its own classroom facilities and growing plots. Gardeners employed with the Eden Project work an early shift (7am to 2pm) and those studying travel to Heligan one afternoon per week (in their own time) to study. Alongside these externally run courses, the Eden Project runs its own Diploma in Sustainable Tourist Operations. The diploma was designed partly as a way to keep full-time employees busy during the quiet winter months and to encourage staff in different parts of the business to learn about other parts of the operation. The diploma is delivered on a work-and-learn basis, with some units being delivered by in-house directors and managers. The diploma covers three levels: the first is equivalent to NVQ Level 2; the second to NVQ Level 3; and the third is equivalent to Level 4 – it includes aspects of marketing and business management and internet-based research activities, culminating in a final project linked to sustainable development and environmental issues.

5.8. Engagement by employers

In contrast to the example above, one final and important enabler we have identified relates to the issue of engagement by employers – especially small companies – with training and development issues, so that they will see merit in encouraging and supporting their own employees to progress to higher levels of knowledge and skills. Small employers, in particular, will often cite financial and time constraints as some of the reasons for not supporting employees to undertake work-related training and development. If you add to these considerations the problems facing small employers

who are widely dispersed across thinly populated areas, relatively poorly served by public transport and located far from any educational establishments, then such barriers can seem almost insurmountable. However, sensitising employers to the potential business benefits of additional learning and taking learning opportunities aligned closely to current business issues out to them and their employees (rather than expecting employers and employees to travel in to learning providers) appear to be two other ways of enabling work-based progression. The example below demonstrates this, but also shows how availability of diverse sources of funding can overcome some of the problems linked to specific frameworks and their funding criteria.

Taking learning out to the field

The background

Duchy College (part of Cornwall College) covers rural studies education and training (eg agriculture, horticulture, equine studies, outdoor/sports education). Very few employers in the land-based industries in the region have more than 10 employees and the college works hard with these micro-businesses to identify their training needs and take training out to them. The college is fortunate in being able to draw on European Social Fund (ESF) Objective 1 funding streams to supplement the core funding received via the LSC, which seems too restrictive. These additional monies have enabled the college to lift the lid on education and training (eg remove age restrictions; offer training geared to units of NVQs at Level 3, not whole NVQs; offer funds to employers to pay for replacement staff while the employee is doing the training).

The schemes

For one particular initiative, the college worked in partnership with a local minibus company to take a minibus, equipped with IT facilities, out to local Farmers' Markets. Farmers were shown how accounting software packages might help them with running their businesses (and there was the added objective of encouraging farmers to recognise the potential for their businesses of other employees gaining additional knowledge and skills).

Another initiative is closely linked to issues that emerged from the foot-and-mouth outbreak in 2001. Following this outbreak, it was recognised that farmers have an important role to play in monitoring animal health and in future disease control. The college worked with the veterinary profession to develop a scheme of work, instructional tutoring materials and a workbook/learning pack for farmers. The college then negotiated with local veterinary surgeons to help deliver this animal health training to farmers as they visited farms on a regular basis. Local farmers have responded well to this approach (which again conforms to good learning theories, with contextualised knowledge having real meaning and relevance to the learners' work role). The scheme also meets some aspects of vets' own continuing professional development (CPD) requirements, and Duchy College sees the process as a good example of its facilitation of an enhanced skills base across the industry in the region.

5.9. Summary and conclusions

In this section, using examples drawn from our chosen sectors, we have shown how many of the inhibitors identified in **section 4** have been tackled by particular SSCs and particular providers of education and training working in collaboration with particular employers.

It would be difficult to establish quantitatively just how many such activities are being successfully undertaken across our chosen sectors, and how many of the employees involved in such WBL activities do then progress to higher levels of knowledge and skills. Also it is clear that in some sectors (and areas within sectors), there is a much stronger steer from central national bodies to put weight behind the specific developments than there is in other sectors (and/or areas).

However, we can summarise the enablers found within this study, as follows.

- Employer demand for further learning may be stimulated by creative and flexible offerings from local colleges that a) have taken the time to develop a good appreciation of the pressures facing local businesses; b) have a good understanding of their needs; and c) have used opportunities for taking learning out to the employers' own working environments and developed flexible delivery and provision.

- Company ethos and appreciation of how further education and training can meet a business need (in a specific and broader sense) play a big part in inducing employers to encourage apprentices and others to seek higher qualifications. Supportive working environments and concern on the part of the employer to link further learning to specific work tasks (hence reinforcing learning) can facilitate real learning gains.

- Access to adequate resources additional to those available within standard apprenticeship frameworks is clearly important – both for employers seeking to develop company-specific variations of more standard apprenticeship schemes to better meet their own needs; and for colleges seeking to develop a creative and flexible response to employers' needs.

- Support from professional bodies can be a crucial enabler, lending validity, value and recognition to specific developments.

- The emergence of clearly articulated pathways to higher-level occupations (currently being developed by SSCs), linked to coherent patterns of educational provision, should lead to improvement in the quality of information and guidance available both to apprentices and employees already working in the various sectors, and also to younger people considering their various options post-16.

6. Conclusions

What kinds of pathway exist from Level 3 vocational qualifications and WBL to higher education or to higher-level knowledge and skills in companies? What helps or hinders successful progression from Level 3 to Level 4?

These were the key questions which this study aimed to address. It was undertaken against a backdrop of various changes to VET over the last two decades, and a recognition in government policy that the vocational pathway to higher education should be strengthened (DfES 2003c). Government also continues to express concerns about the lack of parity of esteem between vocational/work-based and academic routes post-16.

Within our study we investigated what a range of national data sets could tell us about the role and significance of Level 3 vocational qualifications and WBL frameworks in enabling progression. But such data sets (discussed in section 2) can only tell part of the story, since they tend to capture data only on publicly funded provision leading to nationally recognised qualifications. So in this study, we also tried to get behind these published data sets to gain a better understanding of what hinders and what helps progression within different employment sectors. We did this by reviewing sector-specific reports and materials; holding discussions with SSCs and other relevant key stakeholders, including educational providers; and by investigating with a range of employers why and how their employees are encouraged to progress to higher levels of knowledge and skills. In such discussions, we were keen to hear not only about formal pathways of education and training provision, but also to learn more about the individual employer's own ethos and culture as regards workforce development, and how employers' in-house education and training structures support employee development.

In section 4, we discussed the main inhibitors to progression to higher-level knowledge and skills via work-based routes, namely:

- further learning is not supported or valued by employers
- the low calibre of students opting for vocational routes
- a lack of awareness of work-based routes to higher education
- uneven quality at Level 3 achievement
- inadequate preparation for higher education
- entry mechanisms
- financial constraints.

In section 5, we looked at the ways in which some of these inhibitors had been addressed in the different employment sectors chosen for the study. Of course, not all the enablers necessarily came about solely as a counterbalance to the inhibitors. For example, the fact that particular employers in certain employment sectors value further learning may be as much a factor of government legislation, which now requires employees working at certain levels to be qualified at Level 4 (eg managers working in the care sector), as it is a factor of employers' own changing values. Conversely, as we saw in another area of employment (horticulture within local authorities), government legislation that required the sub-contracting out of certain services had, in the view of some employers, actually damaged a previously well-understood work-based career structure.

Still, notwithstanding the fact that we had chosen to focus on four different sectors of employment, each facing its own particular challenges in terms of the supply of and demand for higher-level knowledge and skills, we found some common themes emerging.

6.1. Key findings

Our study has shown that there is no clear or simple vocational ladder of progression to higher levels – often, the journey made is rather complex, especially when taken by adults. This is not well known or well understood. There are various routes in different sectors and occupational areas; some, for a variety of reasons, are more established and successful than others. But for many people who are thinking of embarking on the 'vocational' route, the way ahead is likely to be fraught, with some significant barriers and difficult bridges to cross along the way.

Within the context of formalised study, we continue to see that, although various progression routes to higher education are available, in practice, the dominant route for young people is still the academic route (ie gaining two or more A-levels). There is now a body of evidence showing how earlier educational attainment strongly influences choices at age 16 about taking academic or vocational pathways. The A-level route to higher education is the most well known among young people, with much less being known by school pupils about the vocational routes open to them. By contrast, adults take a wide variety of routes into higher education. However, the absence of much national progression data on adults (ie over 21 years old) makes it impossible to make valid comparisons between the different possible routes into higher education or to measure their achievements.

Looking specifically at work-based routes, there is little evidence of much progression to formal study beyond Level 3. The apprenticeship route currently makes a very small contribution to the HE population, with around 1% of leavers going on to full-time higher education. Even if this is an underestimation (as there may be more people moving up a year or two later after a period of working), any increased progression is likely to be focused in a few areas where both numbers and completers are much higher than the average (eg engineering manufacture). Several reasons explain this lack of progression – principally, a lack of strong demand by employers and employees to push progression and a lack of understanding of routes beyond Level 3 qualifications. There are, however, significant sectoral differences. For example, in some sectors of employment, progression on formalised learning routes (and not necessarily via an apprenticeship route) leading to qualifications is easier and more acceptable than in others, due to different drivers of demand at Level 3 and Level 4. In addition, different employers take different approaches to developing their staff and use qualifications in different ways at Level 3 and above.

Recent attempts to make improvements include:

- new foundation degrees (FDs) offering new opportunities for work-based progressors
- the development of various types of local and sector partnership project to build bridges from vocational qualifications and WBL to higher education
- the development work by UVAC, in conjunction with the LSC and UCAS, to develop an accreditation system to support progression from AMAs to higher education.

In addition, at a time when the government has reformed the apprenticeship scheme again, we see some employers planning to introduce Graduate Apprenticeship (GA) schemes as a way of ensuring that highly qualified people (graduates) acquire the practical and technical knowledge and skills necessary for jobs in their sector.

Much more still needs to be done, however, in terms of changing the prevailing cultures both within the compulsory and post-compulsory education sectors and within different sectors of employment.

The *key messages* from our study are as follows.

- Careers guidance and information – both in schools and colleges for young people and in the workplace for those in jobs requiring Level 2 or Level 3 qualifications or on Advanced Modern Apprenticeships (AMAs) – need to make it clear that the vocational and work-based educational pathways can be viable routes for people with the ability and motivation to succeed. They should not be seen as primarily for low academic achievers.

- Although improvements to the apprenticeship frameworks are being made, much work needs to be done to encourage more high achievers to opt for apprenticeships.

- Further work needs to be done to improve success rates within AMA frameworks so that more AMAs gain the Level 3 qualifications, key skills and learning experiences that will give them entry to higher education, and are motivated by their success to apply.

- To build the value of lifelong learning to employers, they should be supported in their efforts to develop work-based learning (WBL) opportunities from Level 3 upwards, including alternative routes that might work better for older employees than the current apprenticeship framework.

- Employers, especially small firms, need to be encouraged to be more aware of and to make more use of provision offered by local colleges and universities (and other education and training providers), both in formal learning for their staff and in WBL.

- Public providers need to be encouraged to make their offerings more accessible to employers; for example, through smaller chunks of learning, appropriately assessed (including assessment in the workplace) and accredited.

- Further work needs to be done in easing the transition phase between Level 3 and Level 4 for work-based or vocational entrants to higher education, to help overcome the problems of unfamiliarity and gaps in the skills needed to underpin learning at higher levels.

- There is a need to capture much more information about progression to Level 4 qualifications via AMA and other work-based routes (including those not associated with formal qualifications) and about other higher levels of learning. This would help better comparisons to be made between academic and vocational pathways, and create a better understanding of how to promote progression more effectively; and to whom (employers and employees); and when (at what time in someone's working life/career).

- University admissions staff need to have a better awareness of the range of Level 3 vocational qualifications and WBL achievements, and a better system is required for recognising equivalencies between qualifications from Level 3 upwards. UCAS has started to include some vocational qualifications on its Tariff system, which is a good start, but this needs further development to embrace a wider range of qualifications and WBL experiences and achievements (eg AMA achievement does not yet feature on the UCAS Tariff). Also, UCAS covers applications to full-time courses only, while

individuals following vocational routes, especially adults, are more likely to want part-time opportunities.

- There is a need for a much better and more comprehensive system which should be based on a national qualifications and credit framework that is embraced by the whole of the HE sector. This would help to make more visible to the sector the range of achievements that potential learners on the various routes from further education and work to higher education may have, and provide recognition of their value. It would also improve consistency in the use of accreditation of prior learning (APL) for HE entry.

- Positive messages about work-based routes need to be strengthened when addressing the range of stakeholders – professional bodies, careers advisers/Connexions services, employers – who all have a role to play in enhancing the value of work-based routes and raising the esteem in which they are held.

Some *key recommendations* follow on from these messages.

- Through its various agencies, DfES should ensure that its policies for education and training address the needs of both young people and older working adults, and do not inadvertently privilege any one particular pathway (eg the academic pathway) to the detriment of others.

- HESA and the LSC should ensure that the ability of national data systems to capture information on achievements at Level 3 and to measure flows from Level 3 to Level 4 is improved in both the HE and FE sectors. Without such improvements, it is difficult to see how judgements will be made on the success (or otherwise) of current policies on VET or initiatives specifically aimed at creating new vocational ladders to higher-level qualifications and skills.

- Advice and guidance services should ensure that IAG on education and training opportunities gives equal prominence to work-based routes and other (ie traditional academic) routes.

- The Apprenticeships Task Force should ensure that changes to the apprenticeship framework and the consequences of these changes for learners' progression are closely monitored and evaluated.

- SSCs should work with employers and with education and training providers to raise awareness of successful practices relating to work-based progression to higher-level knowledge and skills.

- SSCs should continue their current work on clarifying pathways to different levels of occupation within their sectors, linking these pathways to educational routes where possible. They should also make such information widely available to both schools and Connexions services.

- RDAs should work with local education and training providers to ensure that potential sources of funding to underpin local initiatives to meet local and regional needs are not overlooked.

- Professional bodies which regulate entry to employment in particular sectors should review their criteria for membership to ensure that these adequately reflect the needs of employers in those sectors for higher-level knowledge and skills gained through a variety of pathways.

- In its forthcoming review of foundation degrees (FDs), the QAA should consider the extent to which students entering FD programmes with vocational and other work-based qualifications are successful in making the transition to study in higher education.

- UCAS should work with the relevant organisations – Universities UK (UUK) and the Standing Conference of Principals (SCOP) – to raise the level of knowledge about vocational and work-based qualifications among HE admissions tutors.

- Universities, colleges and employers need to have better dialogue with each other (at local/regional levels) to improve their understanding of the vocational routes to (and through) higher education that are under development – such as the reformed apprenticeship frameworks.

- UUK and SCOP (with the QAA) should encourage the development of a unified sector-wide approach to accrediting WBL and full or partial vocational qualifications for entry to higher education, together with the structures needed to support that approach.

- Together with other organisations such as HESA and HEFCE, the LSDA needs to investigate how existing national data sets (on HE students and qualifiers, apprentices, college students and other work-based learners at Level 3 and Level 4) can be better utilised to improve the current assessment of vocational progression. These organisations should also undertake further analysis, where possible, and recommend where improvements are needed in the collection of such data to improve its quality.

It may be that government, in calling for clearer vocational pathways to higher education, is expecting too much and too soon. There are many plans under discussion and a number of developments underway around the country, but in many cases, their outcomes and student experiences are yet to be evaluated, resulting in a lack of hard evidence from which to judge what works best from actual experience. Better and more clearly articulated frameworks and pathways may be a part of the process of achieving parity of esteem between vocational and academic pathways. But arguably a much more significant part is changing the mindset of those in education and in employment who, by their very actions – whether it be in providing advice and guidance, or recruiting and promoting personnel, or regulating entry to certain occupations – send out strong signals about the value and worth of certain types of education and training provision.

In this study, we have come across some specific aspects of the delivery of AMA frameworks that could serve as valuable lessons for the delivery of FDs (particularly in terms of the accessibility and relevance of workplace opportunities). But the lessons for each of these work-related and work-based education programmes do not end with such specific considerations. Much more important and fundamental questions still need to be addressed, such as how to make work-based educational provision at Level 3 upwards work more effectively in meeting immediate labour market needs, while at the same time laying appropriate foundations for higher levels of learning.

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Appendix 1: Data sources

Data presented in this report has come from a number of sources. Some are estimates published in the series of National Statistics *Statistical First Release* (SFR) publications, which are based on a number of information sources (eg combining information from schools and colleges). Other data has been provided directly by the LSC, the DfES and by HESA, on request.

The following main statistical publications have been used:

DfES Statistical First Release 03/2004 (National Statistics)

This contains information on the level of highest qualification held by people of working age in England in 2003. The statistics are estimated from the Labour Force Survey (LFS), a quarterly sample survey of the UK population. The LFS for the autumn quarter in 2003 and previous autumn quarters was used to identify numbers of people holding qualifications at different levels.

DfES Statistical First Release 07/2004 (National Statistics)

This contains information on how the Higher Education Initial Participation Rate (HEIPR) is calculated.

DfES Statistical First Release 18/2004 (National Statistics)

This presents the most recent estimates of participation of 16–18 year olds in full-time education and in government-supported training in England. It uses data from several sources, taken at snapshot dates in the year (which vary slightly between sources): these sources include the School Census on pupils; the LSC's individualised student/learner record (ISR/ILR) on learners in FE colleges and on WBL programmes; and HESA data on students enrolled in HEIs. It was used to identify people studying at Level 3.

LSC Statistical First Release 04 (National Statistics)

This presents the most recent information on LSC-funded learner outcomes in post-16 education and training in England. The statistics are derived from the ISR for further education and the ILR for WBL. They cover those taking NVQs and in apprenticeship frameworks, of all ages, but predominantly are people aged under 19, taking qualifications that count towards LSC's targets. This source was used to identify achievements at Level 3 in WBL in 2002/03 and earlier years, including apprenticeship participation.

DfES Statistical First Release 20/2004 (National Statistics)

This presents information on vocational qualifications in the UK for 2002/03. The main data sources used are the National Information System for Vocational Qualifications (NISVQ) and the Secondary School and College Performance Tables database. These are databases maintained by the DfES and the Qualifications and Curriculum Authority (QCA) respectively. The QCA collects information from the main bodies that award NVQs – Edexcel; Oxford, Cambridge and RSA Examination Board (OCR); City & Guilds, etc.

The following data sources provided information directly.

The LSC's WBLYP trainee database

This provided information on apprenticeships – the learning outcomes of apprentices and destinations for 2002/03.

The LSC's ILR database

Accessed via the LSDA, this provided information on all new enrolments in WBL and those aged under 22 on different programmes in WBL in 2002/03.

The Youth Cohort Survey (YCS)

Data used related to cohort 8 and sweep 3 in the year 2000. YCS data is held at the DfES, but analysis was provided by HEFCE. The information was used to estimate the percentage of learners with vocational and academic qualifications at age 18 who entered higher education by age 21.

The HESA student record

This provided information on the highest qualification held by students enrolled on programmes at undergraduate level (broadly Level 4) at HEIs in England (home-domiciled students only). This may include franchised students at FE colleges, but not other students at Level 4 at FE colleges.

Since only a limited amount of information is published on students' backgrounds and qualifications prior to entering undergraduate study, a special run of the HESA student record data set was requested for the academic year 2002/03. This enabled us to separate out the different types of undergraduate programme (eg first degree, foundation degree, HND, HNC, professional study, etc) and to analyse the highest qualification held by people entering these various programmes, according to various student characteristics (eg age, gender) and by mode of study. We were, however, reliant on the categories used by HESA, which cover a wide range, both above and below HE level (around 35 in total). However, only a small group of categories was of particular interest in this study, to help us identify the significance of vocational and work-based qualified entrants. In particular, it should be noted that the main A-level category used by HESA also contains some people with combinations of academic and vocational qualifications at Level 3 – it is defined as 'GCE A-level/A-level equivalent qualifications, SQA Highers and equivalent – includes any combination of these qualifications plus GNVQ/GSVQ level 3, NVQ/SVQ level 3'. However, we were able to identify separately those with BTEC and SCOTVEC National Certificate/Diploma (ONC/OND) as their specified highest qualification. In further discussion with HESA, we obtained some further analysis from them that separated out the A-level only qualified students, but this came too late for much inclusion in the main report (some preliminary analysis only is included).

It should be noted that HESA does not at present identify students who have completed apprenticeship frameworks, so no information is available about that group from this source.

Appendix 2: Additional statistical tables

Qualification group	A-levels/ Highers/AVCE/ GNVQ/NVQ3 (any combination)		BTEC/ONC		Access/ foundation course		Other Level 3 qualifications		Previous HE/Level 4+		Professional qualifications		Other	
	<21	21+	<21	21+	<21	21+	<21	21+	<21	21+	<21	21+	<21	21+
First degree	83.4	42.3	2.4	3.6	2.6	10.4	4.1	5.2	2.8	17.4	0.1	4.4	2.5	10.3
DipHE/Cert HE	44.2	10.6	6.4	2.0	1.2	6.8	7.6	4.9	4.8	23.6	1.5	22.1	24.8	18.2
Foundation degree	52.3	17.7	13.8	7.6	5.6	3.9	5.8	12.5	6.2	13.5	0.8	9.5	7.1	24.8
HND/HNC	59.4	26.4	13.3	11.8	1.2	4.2	6.6	8.2	6.0	13.9	1.4	4.2	4.5	17.9
Other undergraduate qualification	27.8	5.7	1.0	0.9	2.5	1.0	6.1	5.0	7.5	40.2	1.6	12.6	28.0	14.0
Professional study/courses	39.2	10.8	3.3	1.7	0.4	7.9	6.8	4.3	2.8	23.8	1.9	26.0	29.9	11.9
All	79.4	18.1	2.9	2.3	2.4	4.3	4.3	3.2	3.3	43.5	0.3	7.9	4.1	11.1

Table A.1 Highest entry qualification of students aged under 21 years and 21+ on entry to undergraduate programmes in HEIs in England in 2002/03

Source: HESA (part of special HESA data run for project, via LSDA)

Qualification group	A-levels/ Highers/AVCE/ GNVQ/NVQ3 (any combination)		BTEC/ONC		Access/ foundation course		Other Level 3 qualifications		Previous HE/Level 4+		Professional qualifications		Other	
	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT
First degree	70.3	17.9	3.0	3.1	6.3	4.7	4.6	4.9	6.9	30.5	0.6	14.9	5.2	12.7
Dip HE/Cert HE	26.4	5.4	4.8	0.9	13.8	1.0	6.8	3.8	14.0	25.5	3.5	29.7	21.3	16.5
Foundation degree	36.7	16.5	10.9	7.5	7.1	1.4	9.8	11.7	9.6	13.1	1.5	13.1	14.6	25.9
HND/HNC	52.8	21.3	10.2	16.7	3.6	1.5	7.0	8.2	7.8	14.6	2.0	4.6	8.6	17.2
Other undergraduate qualification	14.7	6.0	0.8	0.9	3.4	0.8	5.1	4.9	29.9	37.8	3.9	12.3	25.8	13.5
Professional study/courses	25.7	2.6	3.3	0.5	13.7	0.9	6.6	2.7	10.5	31.9	3.4	42.0	22.5	5.7
All	55.3	9.0	2.8	2.2	5.6	1.0	4.1	2.7	20.8	44.5	0.8	13.1	6.2	13.4

Table A.2 Highest entry qualification of students on full-time sandwich and part-time undergraduate programmes in HEIs in England in 2002/03

Source: HESA (part of special HESA data run for project, via LSDA)

	First-degree students								
Principal subject	Access / foundation course	A-levels/ Highers/ AVCE/GNVQ/ NVQ3 (any combination)	BTEC/ONC	Other	Other Level 3 qualifs.	Previous HE/Level 4+ qualifs.	Professional qualifs.	Unknown	Total first degree
A - Medicine & dentistry	90	21,317	11	106	663	2561	11	881	**25,640**
B - Subjects allied to medicine	4976	31,183	1113	2553	2098	14,613	10,541	4021	**71,100**
C - Biological sciences	3200	56,405	2220	2926	2773	3834	421	1910	**73,689**
D - Veterinary sciences, agriculture & related subjects	156	5710	524	288	263	884	47	314	**8186**
F - Physical sciences	920	32,575	319	1229	1230	1408	89	979	**38,748**
G - Computing sciences	4478	56,598	3322	6203	3691	8616	419	3518	**86,847**
H - Engineering	2393	33,578	2438	5766	2997	6989	322	2610	**57,093**
J – Technology	413	3906	385	478	432	869	33	276	**6793**
K - Architecture, building & planning	645	10,253	683	1676	1052	3971	151	1179	**19,612**
L - Social studies	4987	53,890	1100	4726	5005	6092	1449	3024	**80,274**
M – Law	1739	29,466	389	3244	2287	2924	515	1798	**42,362**
N - Business & administrative studies	4518	75,044	1926	10,517	6491	12,392	973	5467	**117,329**
P - Communications & documentation	876	18,270	1092	1441	1181	1417	86	869	**25,233**
Q - Linguistics, classic & related subjects	1711	29,342	272	1554	1603	1415	196	1060	**37,153**
R - European languages, literature & related subjects	183	16,436	54	1135	1278	870	64	535	**20,556**
T- Eastern, Asiatic, African, American & Australasian languages, literature & related subjects	151	5277	53	304	287	216	22	364	**6676**
V - Historical & philosophical studies	1763	30,927	265	1619	1828	2000	356	1244	**40,002**
W - Creative arts & design	17,842	42,046	7996	4468	3940	7571	509	3061	**87,433**
X – Education	2259	17,116	1834	1632	1404	3309	1557	1746	**30,858**
Y – Combined	479	4060	148	817	336	786	126	718	**7470**
Total	**53,781**	**573,401**	**26,145**	**52,683**	**40,841**	**82,741**	**17,887**	**35,575**	**883,054**

Table A3 Highest qualification on entry of students taking different subjects on first-degree courses in England in 2002/03

Source: HESA (part of special HESA data run for project, via LSDA)

	Foundation degree students								
Principal subject	Access/ foundation course	A-levels/ Highers/AVCE / GNVQ/ NVQ3 (any combination)	BTEC/ONC	Other	Other Level 3 qualifs.	Previous HE/Level 4+ qualifs.	Professional qualifs.	Unknown	Total foundation degrees
A - Medicine & dentistry	0	0	0	0	0	0	0	0	**0**
B - Subjects allied to medicine	20	254	25	138	116	87	37	88	**765**
C – Biological sciences	9	90	26	16	6	70	1	9	**227**
D - Veterinary sciences, agriculture & related subjects	7	98	81	73	42	38	2	7	**348**
F - Physical sciences	1	73	5	14	2	18	3	4	**120**
G - Computing sciences	21	290	31	208	61	66	21	24	**722**
H - Engineering	45	285	129	66	44	106	10	117	**800**
J - Technology	2	40	14	7	2	10	3	3	**79**
K - Architecture, building & planning	2	41	15	39	15	23	2	53	**190**
L - Social studies	23	245	133	252	255	192	239	154	**1493**
M - Law	1	7	2	2	1	1	0	0	**14**
N - Business & administrative studies	64	491	43	264	105	103	72	182	**1321**
P - Communications & documentation	5	94	14	25	32	32	7	8	**216**
Q - Linguistics, classic & related subjects	0	0	0	0	0	0	0	0	**0**
R - European languages, literature & related subjects	0	0	1	0	0	0	0	0	**1**
T- Eastern, Asiatic, African, American & Australasian languages, literature & related subjects	0	0	0	0	0	0	0	0	**0**
V - Historical & philosophical studies	0	0	0	0	0	0	0	0	**0**
W - Creative arts & design	227	403	236	144	74	136	10	161	**1388**
X - Education	46	422	184	740	399	306	273	224	**2594**
Y - Combined	0	89	69	214	19	85	106	52	**634**
Total	**472**	**2921**	**1005**	**2201**	**1172**	**1272**	**783**	**1085**	**10,911**

Table A4 Highest qualification on entry of students taking different subjects on foundation degree (FD) courses in England in 2002/03

Source: HESA (part of special HESA data run for project, via LSDA)

	HND/HNC students								
Principal subject	Access/ foundation course	A-levels/ Highers/ AVCEs/GNVQs /NVQ3 (any combination)	BTEC/ONC	Other	Other Level 3 qualifs.	Previous HE/Level 4+qualifs.	Professional qualifs.	Unknown	Total HND/HNC
A - Medicine & dentistry	0	0	0	0	0	0	0	0	**0**
B - Subjects allied to medicine	21	188	43	48	30	46	7	92	**474**
C - Biological sciences	27	614	127	123	107	131	25	159	**1313**
D - Veterinary sciences, agriculture & related subjects	49	799	530	314	186	206	32	230	**2345**
F - Physical sciences	11	293	60	84	38	88	20	61	**655**
G - Computing sciences	350	5104	856	1134	871	1169	197	988	**10670**
H - Engineering	107	1493	1844	962	480	849	536	795	**7067**
J - Technology	36	128	59	87	58	130	235	58	**790**
K - Architecture, building & planning	59	841	590	475	286	399	66	581	**3297**
L - Social studies	57	503	113	131	101	95	41	110	**1151**
M - Law	2	105	3	33	33	8	0	6	**190**
N - Business & administrative studies	224	7309	609	1585	979	1059	148	1210	**13,123**
P - Communications & documentation	16	437	81	63	70	41	4	58	**770**
Q - Linguistics, classic & related subjects	0	10	2	5	0	5	0	0	**22**
R - European languages, literature & related subjects	0	1	0	0	0	1	0	0	**3**
T- Eastern, Asiatic, African, American & Australasian languages, literature & related subjects	0	0	0	0	0	0	0	0	**0**
V - Historical & philosophical studies	1	20	2	2	2	7	2	2	**38**
W - Creative arts & design	397	1648	959	485	286	612	71	644	**5103**
X - Education	10	628	172	102	73	86	29	166	**1266**
Y - Combined	0	1	0	0	0	0	0	0	**1**
Total	**1368**	**20,121**	**6050**	**5633**	**3600**	**4933**	**1412**	**5159**	**48,276**

Table A5 Highest qualification on entry of students taking different subjects on HND/HNC courses in England in 2002/03

Source: HESA (part of special HESA data run for project, via LSDA)

Appendix 3: List of organisations contacted

Aimhigher
Aimhigher, Hereford and Worcester
Automotive Academy (Skills for Auto)
Barking and Havering Colleges [Centre for Excellence in Manufacturing Engineering (CEME)]
Birmingham and Solihull LSC
BMW Group
Bradford College (applied sciences)
Canterbury College (travel services)
Capel Manor College (horticulture)
CITB-construction skills
Coblands Nurseries
Cornwall College, Camborne (travel and tourism)
Cornwall Tourism Forum
Duchy College (agriculture and horticulture)
Eden Project, Cornwall
English Heritage (gardens and landscape)
Guildford College (travel services)
Horticultural Academy
Institution of Incorporated Engineers
Lantra (SSC)
London Borough of Enfield (horticulture)
Milton Keynes, Oxfordshire and Buckinghamshire (MKOB)
Newcastle College (travel and tourism)
NHS University (NHSU)
NHSU, East of England
NHSU, North West
Northumberland College
Notcutts (horticulture)
People's College, Nottingham
People First (SSC)
Pershore College (horticulture)
SEMTA (SSC)
Sheffield Hallam University
Somerset College of Arts and Technology (SCAT)
The National Trust
The Royal Parks
Training Organisation for the Personal Social Services (TOPSS)
University of Bradford, School of Engineering, Design and Technology
University of Northumbria at Newcastle (travel and tourism)
Warrington LEA